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ABSTRACT

This proceedings, containing 69 paper and poster presentations, focuses on innovation and hope with a glance to the future. The conference was planned to include theoretical discussions, current research findings, and promising practices based on sound evidence. Current issues in special education include the use of technology, integrating theory and practice for all ages, and effective professional development. The proceedings is organized to correspond to conference strands: at-risk students, collaborative education models, early childhood special education, gifted education, leadership and policy issues, multicultural education, parents and families, professional development, technology, transition, and understanding issues of low incidence disabilities. (Author/SV)

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American Council on Rural Special Education

1999 Conference Proceedings

Rural Special Education
For the New Millennium

March 25-27, 1999
Albuquerque, New Mexico

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INTRODUCTION

This collection of papers marks the 19th year that the *American Council on Rural Special Education* (ACRES) has met for its conference. Our goal has been to gather and share the most current experiences and research, skills and knowledge in rural special education. Although 1999 marks the end of the millennium, we believe it is the beginning of a better understanding and situation for rural children and youth with disabilities and/or gifts and talents and their families.

The ***Proceedings*** represents the 69 paper and poster presentations delivered in Albuquerque, New Mexico March 25th through the 27th, 1999. The theme for the conference is RURAL SPECIAL EDUCATION FOR THE NEW MILLENNIUM. Presentations focus on innovation and hope with a glance to the future. The conference was planned to include theoretical discussions, current research findings, and promising practices based on sound evidence. The issues include the use of technology, integrating theory to practice for all ages, and effective professional development.

The ***Proceedings*** is organized to correspond to the topical strands that were used to weave a rural focus into the essence of our conference. The strands are At Risk Students, Collaborative Education Models, Early Childhood Special Education, Gifted Education, Leadership and Policy Issues, Multicultural Education, Parents and Families, Professional Development, Technology, Transition, and Understanding Issues of Low Incidence Disabilities.

Special recognition is deserving of the many people who reviewed abstract proposals for this conference. A review panel of over 50 professionals in special education with expertise in their specific areas worked hard to provide a diligent review to assist the presenters in improving the quality of the papers. Each abstract was reviewed by at least three professionals who assumed responsibility for the high professional standards of our conference.

Our authors represent professionals from public and private schools; community, state and national agencies; college and universities; and private consulting agencies. We thank each of them for his or her contribution to rural special education.

Diane Montgomery, Chair
ACRES Program Committee

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COUNSELING IMPLICATIONS FOR RURAL AT RISK YOUTH IN TRANSITION: AN ADJUNCT TO THE PASSAGEWAY PROGRAM

Transitional services for students with disabilities in postsecondary settings are an important aspect of a complete education in order to prepare students with disabilities for adult life. Transitional services include those activities that lead to continuing education, independent living and successful employment. According to Evers (1996), there has been a significant increase in the emphasis on these kinds of services. The Passageway Project at the University of West Alabama was a joint project with the U. S. Department of Education. The Passageway Project was designed to provide transitional services for rural at risk youth. In order to achieve successful transition, there is a need for careful planning in the formulation of Individual Education Plans with sound postsecondary planning (DeStefano & Wermuth, 1992). To improve the quality of life for students with disabilities in postsecondary settings, educators must take into account schoolwork, related activities, employment, responsibilities at home and community participation (Evers, 1996). The Passageway Program at the University of West Alabama addresses each of these areas of need for at risk youth with disabilities in rural west Alabama. The project is designed as a transitional program. Counseling services for Passageway participants were provided through professional counseling, group counseling provided by trained graduate assistants and peer counseling. The counseling services were utilized as a support system for the regular program activities.

Counseling services were an integral part of the Passageway Project and were initiated prior to the arrival of the program participants, while being continued through follow-up activities and final reporting. Initial counseling services were begun at the respective school and work sites of the selected participants. The parents of the participants were contacted and interviewed so that the parents had a thorough knowledge of the program the involvement that was required of them and their children. The initial training sessions for the program coordinators and the staff members who were in direct contact with the students, were begun before the program participants arrived on campus. The staff members included the graduate students who provided instruction and guidance, the teachers, and the residence hall directors. These training sessions were developed in the format of workshops that were conducted by the Licensed Professional Counselor who was on staff with the Passageway Program. The workshops were conducted in two sessions. During the first session, gang involvement, aggressive behavior, substance abuse and a variety of at risk behaviors were addressed. Before the methodologies of intervention were planned and discussed, it was imperative that all of the involved staff understood and were able to recognize at risk characteristics of the students involved in the Passageway Project. The second workshop session offered direct intervention methods for handling potentially problematic situations. The counseling staff tailored the intervention methods to the needs of the participants based on information provided by teachers, counselors, parents, students and other professionals.

In conducting our first training session for our staff members, we focused on the following topics:

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1. Family characteristics of typical Passageway participants
    - A. Low income
    - B. Limited education
    - C. Dysfunctional
    - D. Inadequate parenting skills

2. Individual characteristics (project participants)included, but not limited to
    - A. Gang involvement
    - B. Limited social skills
    - C. Special Education
    - D. Behavior problems
    - E. Possible Substance Abuse
    - F. Poor home supervision
    - G. Poor Academic Performance
    - H. Deviant behavior
    - I. Sexualized behavior
    - J. Aggression
    - K. Low self-esteem
    - L. Irresponsible thinking patterns

Our second training session for our staff focused on teaching the necessary skills to effectively work with our participants. The following expanded list was developed to ensure the safety of both our participants and our staff, as well as to promote efficiency and effectiveness in the delivery services that the Passageway Project offered:

- One on one counseling - We encouraged our staff members to interact on a one on one basis with the participants unless specific group activities were being conducted. One on one counseling is especially important when interacting with gang members or aggressive clients to prevent them from "losing face".

- Do not sit if they stand - This prevents a potential gang member or a hostile client from achieving a "power position " over the counselor.

- Maintain professional distance - The staff members are staff and not participants in the project. They can not be friends with the participants.

- Listen - Do not monopolize the session.

- Eye contact-Make normal eye contact. Gang members or clients who exhibit aggressive or hostile behavior may take staring as a challenge.

- Language-Use appropriate grammar, no slang or profanity and speak calmly in complete sentences.

- Accentuate the positive-Avoid negatives whenever possible. Point out the positive attributes and behaviors of the participants whenever possible. "Catch 'em being good".
- Staff dissension-Settle staff disagreements other than in the presence of the participants.

- Confidentiality-Always respect the confidentiality of the participants when they confide in you.

- Clothing-Always wear appropriate, non-seductive clothing.
- Touching-Avoid inappropriate physical contact.
- Gang rituals and clothing-No gang colors or graffiti were allowed. This included books of knowledge and drawing. We did not allow the participants to use gang nicknames.

The above behaviors of effective counselors were taught to our staff members who worked directly with the project participants. These staff members also provided career exploration for the project participants in addition to problem counseling. If serious difficulties arose, or if subjects were broached that the staff counselors needed assistance with, they were advised to contact the Licensed Professional Counselor who was on call on a continuous basis. The techniques outlined above worked well for the student population that participated in the project. The techniques proved to be successful with hostile and aggressive youth, as well as those who displayed other behavior problems. The overall impact was that the Passageway Project operated in such a manner as to enhance the living skills of the participants in order for them to realize a better quality of life through a sound transition program.

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CONTEMPORARY ISSUES EDUCATION: RURAL RISKS, OBSTACLES AND RESOURCES

Youth across the country are grappling with issues such teenage pregnancy, HIV and other sexually transmitted diseases, child abuse, rape, drug and alcohol abuse, suicide, gang activity and delinquency, racism, abortion, domestic violence, and tobacco use. Youth with disabilities are particularly susceptible to dangerous outcomes associated with these contemporary issues. As the inclusion movement continues to integrate students with disabilities into communities, these students are placed more often into a variety of vulnerable situations in which they may be exploited and manipulated. How can the risks associated with contemporary issues be reduced for students with disabilities? Given the enormous numbers of special education students in mainstreamed settings and the costs of the social, legal, medical, and personal outcomes of their victimization, the question of risk reduction is of vital importance.

In this paper, we will explore the education of students with disabilities in terms of these contemporary issues. We will focus on:

(1) A review of some of the risks experienced by students with disabilities,
(2) A summary of an ongoing study of the efforts and experiences reported by rural and urban classroom teachers in addressing these risks and issues, and
(3) An overview of the supports that might facilitate teacher efforts to address contemporary issues education in the future.

Several studies document the high degree of social, medical, and legal risk to which youth with disabilities are exposed. Some of these risks are listed below.

- The prevalence of alcohol abuse, drug abuse, and suicide is significantly greater among adolescents with learning disorders, emotional disorders, and behavioral disorders than among peers who are not disabled (Forness, 1986; Leone, Greenberg, Trickett, & Spero, 1989).
- A disproportionate number of students with disabilities are the victims of sexual abuse. Teens with disabilities are particularly susceptible to sexual exploitation because of their dependence on caregivers, emotional and social insecurities, and a lack of education regarding sexuality and sexual abuse. In a study of young women with mental retardation referred for birth control, it was found that 25% had been sexually abused (Chamberlain, Rauh, Passer, McGrath, & Burket, 1984).
- The incidence of pregnancy among adolescent girls with disabilities is approximately 20%, which is disproportionately high in comparison to peers without disabilities (Kleinfeld & Young, 1989).
- Almost 30% of youths incarcerated in correctional facilities have been identified as having disabilities (Rutherford, Nelson & Wolford, 1989). Young offenders with disabilities are more likely to plead guilty, less likely to plea bargain, more often convicted, less likely to be paroled or placed on probation, and serve longer sentences than nondisabled youths incarcerated for the same crimes (Santamour, 1987).

The extent to which public schools provide risk reduction for students through prevention and protection programs varies across communities. Research indicates that even when schools do provide risk-reduction programs, many students in special education are excluded. For example, several studies that describe the substance abuse epidemic point out that students with disabilities are frequently excluded from available drug abuse prevention programs. A National School Boards Association study reported similar findings in the area of HIV-prevention education. This study indicated that fewer than 25% of students with autism received HIV-prevention education and fewer than 50% of students with emotional disturbance or mental retardation received such instruction (National School Boards Association, 1990). Significant numbers of students with disabilities are excluded from discussions of extremely important controversial issues in the classroom.

In spite of how parents, teachers, or administrators may personally feel about topics such as teen sex, abortion, gangs, child abuse, suicide, or drugs, special education students are struggling to contend with these issues often without the necessary information and support. To investigate the role of special education teachers in this area, we (Lamorey & Leigh, 1996; Leigh & Lamorey, 1996; Leigh, Huntze, & Lamorey, 1995) explored the extent to which special education teachers addressed various contemporary issues with a variety of special education students.

Through the use of a survey instrument, we gathered information regarding the extent to which 45 contemporary issues were addressed by special education and general education teachers across Missouri and Arizona. The purpose of the survey was descriptive in nature, that is, to investigate the extent to which teachers address a range of contemporary issues and to elicit teacher comments regarding obstacles and needs relative to contemporary issues education.

A list of the contemporary issues from the survey is presented in Table 1. This list of issues was constructed from a pool of items that represented controversial subjects not addressed in the traditional academic curriculum. Development of the survey is discussed in more detail by Leigh, Huntze, and Lamorey (1995).

Initially, packets of surveys were mailed to principals of 270 randomly selected school districts in the state of Missouri. Principals were asked to distribute the surveys to a teacher of students with mental retardation (MR), a teacher of students with behavioral and emotional disorders (BED), and a teacher of students with learning disabilities (LD). A total of 407 teachers completed and returned the survey instrument. The Missouri respondents included 151 teachers of students with LD, 142 teachers of students with MR, and 114 teachers of students with BED.

Copies of the survey were also mailed to principals of about 150 high schools in Arizona with instructions to distribute the surveys to teachers of students with LD, with BED, with MR, and teachers of typical learners. At this point we have tallied the responses of 102 urban and rural Arizona teachers. Arizona respondents included 39 teachers of students with LD, 20 teachers of students with MR, 10 teachers of students with BED, 11 teachers of cross-categorical classrooms, and 22 teachers of typical learners.

In completing the survey, teachers were asked to rate each item on a scale according to the extent to which they addressed the topics with their students. For example, a rating of 1 indicated that the teacher did not address the topic with a majority of students, a rating of 2 indicated that the teacher addressed the topic to a very limited extent, a rating of 3 indicated that the topic was addressed to some extent, and a rating of 4 indicated that the teacher addressed the topic fully and completely.

The results of the survey were rich in content as teachers took a considerable amount of time to include written responses regarding their roles, responsibilities, and perceptions of needs in contemporary issues education. The results will be discussed initially in terms of the ratings of the extent to which teachers addressed various contemporary issues. In addition, comparisons of the ratings of urban and rural special educators as well as general educators will be explored. Finally, an analysis of the teachers' comments will be presented.

Mean ratings were computed for each of the 45 items for each disability group. These means are displayed in Table 1. It is evident that most special education teachers did not address these topics to much extent. On average, even the topics with the highest ratings were addressed only "to some extent" (a rating of 3 on the scale). The most commonly addressed topics were "attitudes towards disabilities", "tobacco use", "drug use" and "moral and ethical values". In fact, more than half of the topics received item mean ratings of less than 2.0 from teachers of students with LD as well as from teachers in the MR area meaning that in general they were covered in a very limited manner.

The group mean ratings reported in Table 1 suggest that teachers of students with BED address these topics to a significantly greater extent than teachers of students with either MR or LD. The results of an ANOVA and Scheffe comparing the composite means for each disability group indicated that the only statistically significant difference occurred between the means obtained for the BED and LD categories. Even though the Scheffe test, which is relatively conservative, provided results suggesting that significant mean differences existed, the small numerical difference between the two means (both of which round to a rating of 2) should be noted, as the practical significance of such a difference is questionable.

A second analysis of the Arizona data focused on the differences between rural special educators, urban special educators, and urban general educators. For this analysis, 19 of the most high risk categories were chosen for comparisons, and the percentage of responses for ratings of 3 and 4 were combined to determine an indicator of the extent to which each contemporary issue was addressed by the various groups of educators. Results according to the five most frequently addressed issues and the five least frequently addressed are indicated below and the expanded results are shown in Table 2.

Top Five Items Discussed By Teachers

Urban educators of typical students:	Urban educators of students w/disabilities	Rural educators of students w/disabilities
drug abuse (86%),	attitudes re disabilities (81%)	attitudes re disabilities (60%)
tobacco use (73%),	racism (57%)	tobacco use (60%)
racism (73%),	tobacco use (53%)	teen pregnancy (59%)
teen pregnancy (69%),	drug abuse (50%)	drug abuse (59%)
attitudes re disabilities (69%)	domestic violence (37%)	alcohol abuse (59%)

Five Items Least Discussed By Teachers

Urban educators of typical students:	Urban educators of students w/disabilities	Rural educators of students w/disabilities
homosexuality (10%)	abortion (4%)	homosexuality (15%)
abortion (27%)	homosexuality (9%)	rape (18%)
rape (32%)	rape (11%)	child abuse (sexual) (18%)
child abuse (sexual) (41%)	sexual promiscuity (15%)	abortion (18%)
sexual promiscuity (41%)	child abuse (sexual) (18%)	sexual promiscuity (27%)

In general, the urban educators of typical students addressed these high risk contemporary issues to a greater extent than did the special educators. Furthermore, in all but two categories, more of the rural special educators addressed the high risk issues than did the urban special educators. In nine of the 19 high risk categories, 10% to 24% more rural special educators addressed high risk issues than did urban special educators.

It is interesting to note that the rural special educators were more often providing contemporary issues education to students as compared to urban educators as often the rural communities are portrayed as more conservative environments wherein families are considered self-sufficient. In the narratives provided by teachers, the rural teachers often noted that they felt bound by community standards and school board policy to avoid controversial issues at all costs. As teachers wrote: "In the district I work for most of these issues are considered the responsibility of the family and we are encouraged not to talk about them in class." "Our school has ruled on some of these topics and does not permit them." "I would be fired in a nanosecond if I touched any of these issues." Thirty-nine percent of the comments by rural educators concerning barriers to discussing contemporary issues focused on the obstacle of conservative community standards/school officials. Twenty-seven percent of the rural educators' comments regarding obstacles focused on the lack of time and 14% of the rural educators' comments reflected teacher concerns about the students' ability levels relative to the perceived complexity of some of the high risk issues.

Urban special educators did not address these contemporary issues as frequently as their rural counterparts. Obstacles noted by urban educators included lack of time (24%), lack of materials (19%), community standards/officials (15%) and parental resistance (12%). The lack of materials was significant for the urban educators, but negligible for the rural educators. Very few educators from either rural or urban settings indicated that a lack of training prohibited them from addressing contemporary issues.

Changes that urban educators felt would facilitate their involvement in teaching contemporary issues included more and better materials (51%), a district requirement that the material be taught (8%), and better leadership (6%). Rural educators indicated that the following changes would enhance their ability to teach contemporary issues: district guidelines/permission (25%), appropriate materials (22%), a coalition of community agencies involved in teaching these issues (15%), and more freedom (6%).

It is important to note that we do not believe that the results of the study provide a basis for criticism of today's special education teachers. Teachers in our society already assume responsibility for students' lives that extend far beyond what might be regarded as reasonable. It seems that society expects teachers not only to address the intellectual, physical, academic, linguistic, social/emotional, and vocational needs of students, but also to do so with minimal resources and rewards, and in the context of environmental and societal conditions that make the task all but impossible. To expect special education teachers simply to take on an additional burden of responsibility involving contemporary issues education would be unfair and unworkable.

If it is to occur meaningfully, contemporary issues education must involve a shared commitment among educators, parents, and others in the community. Generally, teachers reported that they were willing and able to provide contemporary issues education for students with disabilities if they had the support, time, guidelines, and materials to do the job. The next steps in addressing contemporary issues must subsequently be:

- to begin to develop meaningful materials which can be adapted for a variety of settings, a variety of student learning styles, and which can be used in modular form for a variety of district requirements,

- to encourage parents, students, teachers, administrators, social service providers, and other community members to participate in choosing content and materials,
- to develop opportunities to discuss contemporary issues in the context of class activities in order to address time constraints,
- establish ground rules regarding confidentiality and respect for others' opinions, and
- present materials at developmentally appropriate ages using a variety of teaching styles and strategies.

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Table 1. Survey Items, Mean, & Standard Deviations of Teacher Ratings By Disability Group

	BED	MR	LD
Attitudes towards people with disabilities	3.23 (.88)	3.11(.97)	2.96(.97)
Tobacco use	3.22(.90)	3.11(1.0)	2.77(.96)
Drug use	3.12(.99)	2.98(1.06)	2.66(1.07)
Moral and ethical values	3.09 (.97)	2.92(.93)	2.78(1.06)
Alcohol abuse	2.98(1.1)	2.89(1.06)	2.53(1.11)
Divorce	2.86(.93)	2.43(.95)	2.38(.96)
Racism	2.74(1.02)	2.40(1.04)	2.31(1.04)
Environmental protection	2.66(.99)	2.60(.90)	2.42(.95)
Death	2.63(.96)	2.43(.94)	2.23(.94)
Violence in the media/movies	2.58(.96)	2.39(.94)	2.27(.92)
Domestic violence	2.56(1.04)	2.28(.93)	2.02(1.00)
AIDS/HIV	2.50(1.05)	2.34(1.14)	2.14(1.10)
Child abuse (physical violence)	2.53(1.04)	2.36(.97)	1.99(1.03)
Homelessness/poverty	2.47(.94)	2.39(1.00)	2.13(.96)
Suicide	2.43(1.03)	2.02(.98)	1.85(.95)
Deception in commercial advertising	2.32(1.01)	2.44(1.07)	2.23(1.07)
Gang activity	2.27(1.04)	1.80(.98)	1.71(.93)
General sexual education	2.26(1.08)	2.20(1.13)	1.91(1.05)
Teenage pregnancy	2.25(1.11)	2.31(1.22)	1.94(1.13)
Appropriateness of military intervention	2.19(.90)	1.92(.86)	1.98(.88)
Gun control	2.17(.93)	1.83(.85)	1.70(.76)
Lyrics of rock music/videos	2.15(.98)	1.84(.87)	1.71(.87)
Gender discrimination	2.15(.98)	1.80(.88)	1.80(.84)
Sexual promiscuity	2.12(1.08)	1.95(1.09)	1.76(1.04)
Child abuse (sexual abuse/incest)	2.10(1.10)	1.99(.99)	1.62(.89)
Sexual harassment	2.08(.93)	1.78(.88)	1.62(.86)
Religious intolerance	2.07(.89)	1.77(.84)	1.77(.90)
Social welfare and entitlement programs	2.04(.93)	1.94(.96)	1.65(.78)
Attitudes towards immigrants	2.02(1.04)	1.90(.94)	1.89(.87)
Safe sex	2.10(1.14)	1.97(1.23)	1.75(1.04)
Sex in media/movies	2.00(.98)	1.82(.72)	1.76(.79)
Differences among religions	1.94(.87)	1.71(.72)	1.76(.79)
Cults	1.88(.88)	1.53(.78)	1.80(.87)
Abortion	1.87(1.04)	1.70(.94)	1.56(.87)
Rape	1.87(1.0)	1.73(.90)	1.50(.84)
Governmental waste/fraud	1.87(.83)	1.71(.81)	1.74(.86)
Political propaganda	1.78(.87)	1.73(.93)	1.73(.85)
Social/political dissent	1.78(.82)	1.64(.82)	1.58(.78)
Church/state separation issues	1.72(.81)	1.57(.84)	1.53(.69)
Nuclear energy	1.71(.82)	1.57(.79)	1.58(.78)
Homosexuality	1.68(.91)	1.44(.64)	1.46(.79)
Animal rights issues	1.66(.75)	1.59(.78)	1.48(.68)
Pornography	1.61(.89)	1.44(.71)	1.33(.68)
Nonviolent resistance	1.55(.80)	1.31(.58)	1.33(.59)
Evolution vrs creationism	1.48(.70)	1.27(.53)	1.38(.71)

Table 2. High Risk Items Ranked By Teacher Categories

Q# 3 Tobacco Use

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	6	33	36	24
Disabled Urban	15	33	33	20
Typical Urban	0	27	23	50

Q# 4 Racism

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	18	30	36	15
Disabled Urban	15	28	37	20
Typical Urban	5	18	64	14

Q# 9 Homosexuality

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	55	30	15	0
Disabled Urban	50	41	9	0
Typical Urban	68	23	5	5

Q# 14 Domestic Violence

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	19	43	25	13
Disabled Urban	33	30	28	9
Typical Urban	18	27	32	23

Q# 18 Suicide

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	38	28	31	3
Disabled Urban	35	46	13	7
Typical Urban	18	27	27	27

Q# 19 AIDS/HIV

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	27	33	21	18
Disabled Urban	26	44	20	11
Typical Urban	14	32	27	27

Q# 23 Teenage Pregnancy

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	27	12	27	32
Disabled Urban	24	41	26	9
Typical Urban	9	23	23	46

Q# 27 Divorce

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	41	28	16	16

Disabled Urban	33	48	15	4
Typical Urban	23	27	27	23

Q#28 Attitudes toward people with disabilities

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	12	27	33	27
Disabled Urban	4	15	37	44
Typical Urban	5	27	23	46

Q# 30 Gang activity

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	24	36	30	9
Disabled Urban	20	50	22	9
Typical Urban	14	23	27	36

Table 2. High Risk Items Ranked By Teacher Categories (continued)

Q# 31 Safe sex

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	30	33	24	12
Disabled Urban	37	44	13	7
Typical Urban	32	17	17	41

Q#32 Alcohol abuse

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	12	27	32	27
Disabled Urban	11	44	32	11
Typical Urban	9	23	18	50

Q#34 General sex education

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	34	31	16	19
Disabled Urban	47	29	18	7
Typical Urban	27	23	23	27

Q# 35 Drug use

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	18	18	24	35
Disabled Urban	17	33	35	15
Typical Urban	0	14	36	50

Q# 36 Sexual promiscuity

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	33	39	18	9
Disabled Urban	41	44	11	4
Typical Urban	18	41	18	23

Q#38 Rape

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	49	33	15	3
Disabled Urban	44	46	11	0
Typical Urban	41	27	18	14

Q#41 Abortion

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	52	30	15	3
Disabled Urban	59	37	4	0
Typical Urban	59	14	27	0

Q#42 Child abuse in the form of physical violence

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	24	41	24	9
Disabled Urban	28	44	24	4
Typical Urban	14	36	23	27

Q#43 Child abuse in the form of sexual behavior including incest

	% of #1 responses	% of #2 responses	% of #3 responses	% of #4 responses
Disabled Rural	38	44	12	6
Disabled Urban	42	40	11	7
Typical Urban	27	32	18	23

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PASSAGEWAY: AN AVENUE INTO THE FUTURE

The emphasis on transitional services has grown significantly in recent years. Successful transition to postsecondary settings is measured by the adult outcomes of continuing education, independent living, and employment (Evers, 1996). According to DeStefano and Wermuth (1992), barriers to successful transition exist that call for careful planning in student Individual Education Plans (IEP) in order to access and succeed in postsecondary programs. Secondary coursework, related activities, work experiences, responsibilities at home, and community participation must be coordinated in order to maximize a student's readiness for postsecondary settings (Evers, 1996).

Unsuccessful transition results in a lack of vocational opportunities available to individuals with disabilities. According to Rusch and Phelps (1987), these individuals with disabilities, are likely to be unemployed, underemployed or only employed part-time. Dowdy, Carter, and Smith (1990) further suggested that students with disabilities have employment status that is limited and their opportunities for independence are seriously curtailed. These deficits all point to the need for comprehensive programming as well as careful planning for transitional programs regarding students with disabilities.

The PASSAGEWAY (Program to Assist Secondary Students in Achieving Gainful Employment for West Alabama Youth) Project was designed to help those students who are at-risk of dropping out of school, students who have not obtained their diploma because of deficiencies in their high school exit exam, or because they dropped out of school and never completed the requirements. The students served came from six rural counties of West Central Alabama. These counties include Choctaw, Greene, Hale, Marengo, Pickens, and Sumter. This project, jointly funded by the U.S. Department of Education and The University of West Alabama, sought to increase the academic, social, and job skills of at risk and dropout special education students. PASSAGEWAY was used as a means of preparing students for opportunities that will be present in their areas in the near future.

The PASSAGEWAY Program established a cooperation between The University of West Alabama, public schools, local businesses and industries, and public and private social service agencies. The PASSAGEWAY Project brought together the resources of the College of Education and the Division of Technology at The University of West Alabama to develop an alternative program that accomplished several objectives. First, the program identified and recruited youth with disabilities who were at risk for dropping out of school or who had already dropped out of school. The school systems in the six counties and the special education teachers within selected schools completed this objective. Information was gathered that included age, gender, race, type of disability, and class standing. Second, it provided the identified youth with functional literacy training. The program employed qualified staff members, which included a reading specialist. Third, the program developed and implemented transitional plans that provided employment training for students ages 16 and above. The staff members developed transition plans that were the most advantageous for each student. The staff also offered a variety of educational experiences to ensure that reasonable alternatives were presented to the participants. The program used activities such as lectures, in-class assignments, and role-playing. Fourth, PASSAGEWAY also offered the identified students and their families with counseling that focused on specific outcomes for the students. Counseling was also directed toward training staff to work effectively with the participants. Next, the program established incentives to ensure student participation by offering alternative scheduling and class formats utilizing distance learning technologies. Each student had the opportunity to become involved with immerging technology through the use of computers. Finally, it developed relationships with the Industrial Board of West Alabama at the advisory level that created a partnership culminating in employment opportunities for students with disabilities. Members of the Industrial board were surveyed to provide feedback on the skills and traits that they felt were most significant when evaluating potential employees.

The PASSAGEWAY project focused on the problems of at-risk special education students and special education students that have dropped out within the four years prior to entering the program. The uniqueness of the project is manifested in the cooperation between The University of West Alabama, public schools, business and industry, and social services agencies. Each entity maintained its unique function while learning to share personnel, resources, and materials with the others. Therefore, a highly organized effort was made in the project to utilize each agency both in individual services and cooperative services. The project focused on the obstacles to successful transition that existed in the six county rural areas. These obstacles included lack of employment opportunities, lack of educational opportunities, deficiency in job skills, and limited mobility. Additionally, the project also attempted to alleviate the common rural problem of distance between facilities.

The PASSAGEWAY Project was created to serve students who were potential dropouts or who had already dropped out of school. Two strands of students were identified to participate in this program. The first strand was incoming 9th, 10th, and 11th graders who were currently in school, but deemed at risk for dropping out of school based on information such as frequency of absenteeism, grades below "C" at report periods, the number of disciplinary infractions and the professional judgement of their respective teachers. Strand Two students were those with disabilities who had dropped out of school four years prior to the entering of the program. These students were referred by virtue of school records, teacher referrals, and by various community agencies, such as the Department of Human Resources, Juvenile Court, and local mental health centers. Both Strand One and Strand Two students could also enter the program by way of their own request.

The PASSAGEWAY Project required a team of professionals possessing experience in education, experience working with students with special needs and their families, staff development, collaboration skills, curriculum development, and systems advocacy. The project required staff members that possessed the above skills. Two resident assistants worked in the dormitory at The University of West Alabama. These assistants were responsible for supervising the participants in the dormitory. The assistants' major function was to ensure student adherence to the dorm rules. Additionally, the assistants were involved with crisis intervention and problem-solving. Two activity coordinators were involved in the PASSAGEWAY Project. These people were responsible for the development and coordination of activities involving all the participants. Other staff members included four graduate assistants, who were assigned to coordinate all program activities, to intervene in major crises, and to provide instruction in career exploration and social skills. Four additional instructors were employed for General Education Development (GED) training and technology exploration. Also included in the program was a transition coordinator and a counselor available on an as needed basis. The transition coordinator served as a liaison between the program participants and industry leaders and the respective public school systems that the participants attended. The counselor served on an as needed basis to assist in crisis intervention and problem solving.

Other than the key personnel responsible for the program and its functioning, there was a number of school and industry related personnel. The school personnel included superintendents of education, special education coordinators and teachers, general education teachers, guidance counselors, and area vocational training campus directors. These important school officials assisted in the referral of prospective program participants and they provided the necessary data that identified these students as being at risk of dropping out of school. They also performed the invaluable service of locating those students who had already dropped out of school. The aforementioned industrial liaisons primarily consisted of personnel directors of key industries in the area. The industrial liaisons were viewed as being instrumental in arranging tours of industrial sites and other potential areas of employment for the PASSAGEWAY Project students. The industrial personnel offered instruction and advice to the students in job interview and retention skills.

Other important components of the program included the availability of a variety of resources. These included the Learning Resources Center (Library), Student Services (Counseling Center), Student Support Services (a federally qualified program offering assistance to qualified degree-seeking students), the Department of Journalism (which contained state of the art equipment making possible distance learning), technical laboratories, and classroom space.

The talented and varied staff as well as the ancillary consultants composed a unique team to implement the objectives of the PASSAGEWAY Project. This group of professionals and student assistants proved adept a linking service in special education, rehabilitation, adult education, vocational education, and postsecondary education. A highlight of their efforts was that in addition to the linkage of professional educational services, they were able to form partnerships with community-based organizations as well as industry and business. The efforts of the personnel involved resulted in an integration of transitional services that were driven by the ideals of independent living, self-determination, and successful employment for the program participants.

The PASSAGEWAY Project focused on building academic, social, and job skills. The academic skills were guided by GED preparation for those who had dropped out of school and study skills for those who are presently in school. The social skills were enhanced through group and individual counseling sessions and through activities that enabled the students to interact with peers, professionals, and others. The job skills highlighted job safety, seeking and maintaining employment, and the necessity of keeping abreast of changes within a job.

The program made efficient use of traditional classroom activities. These activities included lectures, and in-class assignments. Basic math and reading skills along with social skills training, career planning, and placement were the primary focus of these activities. Strand One students received these services daily on campus at The University of West Alabama for approximately one week. Strand Two students who were involved for six weeks. Students received services on The University of West Alabama's campus geared toward job seeking activities and skills. These skills included learning to appropriately fill out job applications, interview techniques, and job retention skills. Strand Two students were also offered GED classes at The University of West Alabama and alternative sites in the area. The students were also offered small, innovative classes that operated in non-traditional ways. The students were provided with a job coach to begin preparation for employment. PASSAGEWAY Project made use of consultation services for its Strand Two participants by having arranged for personnel directors of various businesses and industries to address them concerning job procurement skills, and work habits leading to job retention. These students were also provided with reading material and videos to augment this phase of their educational process.

During the second and third years of the program, any Strand Two students who had received a GED certificate was offered the opportunity to attend The University of West Alabama. Each of these students was offered a stipend of $1,500.00 per quarter for his/her education. In classes at The University of West Alabama for Strand One students, the program provided a computer lab that contained on-line services for twenty personal computers equipped with printers.

Research has shown that at risk students, like regular students, are motivated by diverse methodology and experiences. The project utilized one-on-one and small group learning activities. Each participant was treated as a unique individual and his/her program was modified to meet his/her specific needs.

During the three year program, services were provided for more than one hundred students. There were no Strand One, at-risk 9th, 10th, and 11th graders, students reported to have dropped out of school. More than half of the Strand Two, having already dropped out, students reported having employment.

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CORRELATING GLASSER'S CHOICE THEORY TO THE BEHAVIORAL REQUIREMENTS OF IDEA 97

The purpose of the paper is to connect the philosophical underpinnings of Glasser's Choice Theory/Reality Therapy to the IDEA requirement of Functional Assessments of Behavior. The goal of this connection is to provide a theoretic and philosophic basis upon which to conduct such assessments.

To accomplish the above stated goal three areas must be addressed:

1. Why are Functional Assessments necessary?
2. What is a Functional Assessment?
3. What is Glasser's Choice Theory?

The final consideration of this paper will be to demonstrate the connection between Glasser's theories and the needs/requirements of a Functional Assessment.

Why are Functional Assessments of Behavior (FAB) necessary?

As a general practice FAB's have been in educational and psychological literature for many years in one form or another. Functional Assessments have been at the root of many theories and practices for modifying maladaptive behavior. However, since 1997 FAB has taken on a new dimension by being required in the Reauthorization Bill of IDEA 1997.

Functional Assessments appear to be at the heart of a Free and Appropriate Public Education (FAPE) for children with Emotional and/or Behavioral difficulties. It would appear to the casual observer that the crafter of this series of laws believes that it would be very difficult to meet the conditions of FAPE without some form of a FAB. Elements of this requirement appear throughout the entire EEP process as well as in discussion regarding FAPE.

Functional Assessments along with Behavior Intervention Plans (BIPs) are mentioned specifically in Section 615(k)(1) of the reauthorization bill. This particular section states that before a school system can change an eligible student's current program to an alternative program for discipline reason a FAB must be conducted and a BIP must be implemented in an attempt to alleviate the behavioral issues. In addition, a FAB is an integral part of a Manifestation Determination for severe problems relating to dangerous weapons and drugs in the school setting.

While specific mention of the FAB's and BIP's in Section 615(k)(1) appears to be the first mention of these activities they are implied in other portions of the law.

OSEP GUIDANCE

Section 614(d)(2)(B) requires the EEP team in the case of a child whose behavior impedes his or her learning or that of others, (to) consider, when appropriate, strategies, including positive behavioral interventions, strategies, and supports to address that behavior. In addition, school districts should take prompt steps to address misconduct when it first appears. Such steps could, in many instances, eliminate the need for more drastic program (IEP) and placement processes required by IDEA.

Section 614(d)(1)(B) of IDEA specifies who must participate in a FAB. Generally speaking those included are the members of an IEP team and other personnel who possesses a working knowledge of the student's behavior as a result of regular or frequent contact with the student. In other words, anyone who has frequent contact with the student and can offer relevant information must be part of this assessment. Specifically, Section 614(d)(1)(B) requires the following members for an IEP Team:

A. The parents of the student with a disability.
B. At least on regular education teacher, if the student is participating:
C. At least one special education teacher, or where appropriate, at least on special education provider of the student.
D. A representative of the LEA who:
    1. Is qualified to provide, or supervise the provision, specially designed instruction to meet the unique needs of children with disabilities.
    2. Is knowledgeable about curriculum
    3. Is knowledgeable about the availability of the resources of the LEA
E. An individual who can interpret the instructional implications of assessment results, who may be a member of a team described in clauses A through E.
F. At the discretion of the parent or the agency, other individuals who have knowledge or special expertise regarding the student, including related services personnel as appropriate
G. Whenever appropriate, the student with the disability.

All of the above combine to firmly establish in the IEP process with the intention of specifically impacting student outcomes and programming

What is a Functional Assessment of Behavior?

While IDEA is very specific about the fact that FAB's should occur, who should participate and the reason for conducting such activity, it offers little or no guidance as to how to actually conduct the FAB itself. Regulations, as of this writing, have not caught up with the law as yet. Once the regulations catch up, then the issue will have more clarity. In the meantime, there are many differing views as to just exactly what a FAB is and/or should be. In an attempt to provide guidance on the issue of what a Functional Assessment actually is, Nelson et al., paraphrased Dunlap in the following:

> The goal of functional behavioral assessment is to identify relationships between personal and/or environmental events and the occurrence and nonoccurrence of a target behavior. (Dunlap et al., 1993)

This definition clearly suggests that behavior is the result of some other environmental force heretofore not typically associated with the behavior. It should be noted that previous attempts to modify behavior have been focused on changing the external controlling force such as reward or punishment schedules. This subtle departure from external management of social factors to connecting the behavior to other "events" changes the focus of the process.

> Functional behavioral assessment is designed to (a) promote hypothesis-driven treatment, (b) place more emphasis on skill building rather than punishment, (c) increase the prospect of a positive treatment outcome, (d) increase the chance of maintenance and generalization of treatment effects, and (e) contribute to the scientific advancement of treatment efforts (Blakslee, Sugai, & Gruba, 1994)

The working explanation employed by the State of Michigan takes a similar, but slightly broader, interpretation:

> In assessing the nature of problematic behavior exhibited by the student, the staff will need to determine what function this behavior serves for this student. In other words, how does this student benefit from engaging in this problematic behavior? In some instances, the behavior may be a result of a physical or medical condition that may serve as the primary reason in which the student is engaged in the behavior. In some situations, the student may engage in this behavior as a result of an environmental variable (i.e., the time of day, the assigned staff or the scheduled activity). And, in most situations the student may engage in the behavior due to the potential reinforcing quality of the behavior. The student has learned that this behavior serves to provide a level of reinforcement that the student finds pleasurable (page 10 of Technical Assistance Document).

According to O'Neill et al (1990) a functional analysis is complete when three main outcomes have been accomplished:

1. Description of the undesirable behavior(s), operationally
2. Prediction of the times and situations when the undesirable behavior(s) will not be performed across the full range of typical daily routines; and
3. Definition of the function(s), e.g. maintaining reinforcers, that the undesirable behavior(s) produce for the individual. While the above is not the definitive discussion of the definition of a functional assessment the reader can see several common themes running through the presentation. These themes can be the basis for understanding what is required of a Functional Assessment of Behavior. Among those themes are:

    A. The need for a philosophical orientation upon which to interpret a child's behavior
    B. Description of the child's behavior including:
        1. The frequency of occurrence
        2. The location & time of day of the occurrence
        3. The seventy of the occurrence
        4. Precipitating factors
    C. The development of a hypothesis to explain the behavior which would include:
        1. What the apparent reinforcers, are for the student when this behavior occurs that keeps the student returning to the behavior.
        2. Identifying the variables that may need to be changed in order to produce a positive change in the student.

Moving to the next level of application these themes comprise the blueprint for action by the IEP Team. Logistically completion of the functional assessment can be a complicated and complex series of tasks. A complete discussion of this task is outside of the parameter of this paper. However, placing these themes in the context of a theoretical and philosophical framework is well within these parameters.

Before any discussion of linking functional assessments to a framework, a theoretical foundation for that framework must be built.

The Basic Elements Of Glasser's Choice Theory

Obviously, within the confines of this paper, the entire body of what makes up Glasser's ***Choice Theory*** cannot be covered. However, the basic elements of ***Choice Theory*** can be explained in sufficient detail so as to give the reader a cursory knowledge of the concepts and how they might be applied to Functional Assessments of Behavior.

Choice Theory has evolved over the 30+ years following the career of Dr. William Glasser and his published works. Historically, several premises have been at the very heart of these works, which are currently, titled *Choice Theory.* These premises follow a progressive line of thought as follows:

All humans have certain genetic needs encoded into their biologic systems
All behavior is purposeful
All behavior is aimed at satisfying our needs Human have the final control of their behavior
Behavior based on what we value as important
What is valued is unique to each individual
All behavior must be seen as part of total biological system.
Given the opportunity/guidance humans can alter their behavior to more acceptable levels.

Figure 1: Basic Premises of Choice Theory by Wm. Glasser

According to *Choice Theory* there are five (5) basic needs that are genetically programmed into every human being. Those five needs are:

- **Belonging:** The need for love and social connectedness. This is the need to be a part of some type of group or relationship.
- **Power:** The need for achieving some type control of over our lives. This could be accomplished by competing, achieving a high degree of quality in our work or gaining some level of importance in our lives.
- **Freedom:** The need to make our own choices, to move about, to pursue what interests us.
- **Fun:** The need for simple joy received in playing, learning creating, or finding solutions.
- **Survival:** The need to satisfy physiological needs to maintain life (e.g. food, water, reproduction, etc.)

Figure 2: The Five Basic Needs

All behavior is undertaken in an attempt to meet or satisfy one or more of the five basic needs listed Figure 2. All human beings go through a process whereby they compare what they want or which Basic Need must satisfied with what they currently have. Glasser describes the internal pictures that human have for getting their needs met as our **"Quality World Pictures".** Pictures in the Quality World are the representations of what it takes to meet our needs. As such, these pictures are highly individualized and/or unique. For example, one person may see the ideal family as being similar to the classic TV family of "Ozzie & Harriet" with little or no conflict and life moving on in a smooth seamless fashion. Another person may view the ideal family similar to the one represented by the TV family of

"Roseanne" which was filled with conflict, confrontation and a series of disjointed ups and downs. Either of these pictures can be Needs satisfying for the individual because it is their unique picture.

As humans attempt to satisfy their needs they go through a comparing process where they take in information from the surrounding world and compare it with their "Quality World Picture". If the incoming information compares favorably, the Quality World Picture is reinforced. A creative system "kicks into gear" in an effort to generate behaviors that maintain this state of equilibrium. The resulting behavior will be consistent with the surroundings and of a positive nature. This positive comparison will result in the person continuing to engage in those behaviors, which continue to reinforce that Quality Picture.

On the other hand if the comparison of incoming information is out of sync with the Quality World Picture then the person comes into conflict with themselves and eventually their surroundings. The creative system "kicks into gear" in an effort to find a reconciliation behavior, which will bring the Quality World Picture, back into harmony. Initially the creative system may initiate a series of behaviors, which may, only in the short run, satisfy a need. As long as the need is satisfied the behavior will continue even though the behavior may be detrimental to the individual. As an example, depression can be an appropriate means to satisfying the need for belonging. When people are exhibiting symptoms of depression it, initially, evokes sympathy and nurturing from those around the individual, thereby meeting the need for belonging. However, allowed to continue the depression takes on a negative if not debilitating quality causing the sympathy and nurturing to stop. The result is the continued state of disharmony in the individual because a need is not being satisfied. Subsequently, the individual may choose deeper levels of depression in an attempt to gain acceptance and fulfill the need for Belonging. The behavior escalates, throwing the person further out of harmony with their surrounding world and their Quality World Picture. This state of disharmony will continue until the creative system changes the behavior to something more effective/efficient

In either the positive or the negative case the resulting behavior is always manifested as a composite behavior. This composite consists of four elements, which are present in all behavior: Feelings, Physiology, Thinking, and Acting. These four elements comprise what is known as **Total Behavior** . All behavior consists of all four elements, all of the time. One element may present itself as slightly stronger than the others at any given time, but all four are present, nevertheless.

In the frame work of *Choice Theory* the Total Behavior of an individual is the result of a relatively conscious decision on the part of the individual. The individual may not have control over which needs must be satisfied but they can exert control over how those needs can be met. In cases where the Total Behavior is totally out of sync with the surrounding environment the individual may need assistance in; identifying the need they are trying to meet, in examining the Total Behavioral System as it is operating, and evaluating the success or failure of those behaviors. Once aware of what is happening the individual is assisted in making plans (tapping the Creative System) which will lead to a more appropriate satisfying of the need.

The Interplay Between Choice Theory and Functional Assessments of Behavior

To this point the critical elements of a FAB have been discussed and defined along with a basic discussion of Glasser's *Choice Theory.* The stated goal of this paper was to demonstrate how *Choice Theory* could play a critical role in conducting a FAB. The interaction between the elements of Choice Theory and FAB's is reciprocal in as much as they can be interchangeable parts, hence the two (2) way arrow in Figure 3 below.

Elements of FAB		Elements of Choice Theory
Need for Philosophical Orientation	↔	Choice Theory itself
Description of Child's Behavior	↔	Total Behavior System
Precipitating Factors	↔	What is the External Environment
Hypothesis for explanation	↔	Identifying which need is to be satisfied
Identifying Variables for change	↔	Developing a Plan

Figure 3: The Interaction of Components

Need for Philosophical Orientation = Choice Theory

As indicated earlier, behavior needs to be seen as part of some bigger picture for it to be thoroughly understood. Those assessing the student and their presenting behaviors must have an orientation from which to form a hypothesis and from which to evaluate the student's behavior. Seeing the behavior in isolation only leads to identifying solutions that may not dramatically affect or alter the student's behavior pattern. Therefore, in this instance *Choice Theory* provides the foundation for understanding the behavior and what it is that the behavior may be attempting to do.

Description of Child's Behavior = Total Behavior System

When describing the child's behavior, "what is the child doing?" the behavior must be seen as a total package and not as a single entity unto itself. Understanding what the student is thinking, how they are feeling (in a physiological sense), and how the child is feeling emotionally adds depth, richness and clarity to the understanding of the actual behavior. The insight gained from this interpretation is invaluable as it begins to provide a clearer understanding as to the child's inner motivation. This understanding is crucial to the development of a hypothesis and ultimately a plan for change.

Precipitating Factors = The External Environment & The Quality World

What is there in the surrounding environment that would cause the child to become out of harmony with their "Quality World Picture"? The child must perceive that something is occurring which is preventing the child from satisfying one or more basic needs. Understanding these precipitating factors require the understanding of the Total Behavior and being able to Identify what needs the child is attempting to satisfy. To thoroughly understand what is out of harmony it is also necessary to understand what the child values or what is included in his/her Quality World. This must be done from the child's perspective and not the adult perspective.

Hypothesis For Explanation = Identifying Which Needs Are Not Being Satisfied.

Understanding which Needs are not being satisfied properly provides the final piece of understanding about the child in an attempt to deal with the behavior. The hypothesis that a given Need is not being satisfied opens the door to action.

Identifying Variables for Change = Developing A Plan

Identifying the variables to change is the final product of understanding the Total Child. Which Needs are not being satisfied as manifested by the Total Behavior of the child becomes the final question before action is taken. Understanding that a Need is not being properly met sets the stage for planning to teach the child different means to satisfying needs. It is quite conceivable that the need for an elaborate

Behavior Intervention Plan, as generally understood, could be eliminated. Assisting a child in fulfilling their needs, appropriately, has the potential for profound and long lasting change.

Conclusion

In this brief paper the correlation between the needs of completing a Functional Assessment of Behavior and the elements Glasser's Choice Theory has been demonstrated. Choice Theory, as described, directly parallels the needs/requirements of a Functional Assessment of Behavior. The actual mechanics of actually completing the FAB utilizing Choice Theory was out of the scope of this paper, and, suffice to say, is a far more complicated matter. The attempt here was to begin to build a foundation from which future work could occur.

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COLLABORATIVE EDUCATION MODELS

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BIOTECHNOLOGY WORKS!

> "...there are clear indications that students with disabilities are not provided the equality of opportunity for science learning" (Stefanich, 1994, p. 57).

For most students with disabilities, the current approach to science education is dismal. Very little attention has been paid to improving science education for students with disabilities (Palmer & Cawley, 1993). Cawley, Kahn, and Tedesco (1989) reported that between 50% and 70% of all students who take science may receive grades of "D" or lower. Stefanich (1994) described the role of students with disabilities in science classroom as that of passive observers. For the most part, high school science laboratories have not been adapted to meet the needs of students with disabilities (Lovitt & Horton, 1992). Stefanich (1994) concluded that teachers of science have had very little training on how to teach students with disabilities. Scruggs and Mastropieri (1994) wrote that since teachers are not knowledgeable about teaching students with disabilities, they fall back on traditional methods of instruction, using textbooks, lectures, and worksheets. Since most students with disabilities receive their science education in inclusive classrooms, it is perplexing as to why there have been only a few initiatives that have addressed the improvement of science education for students with disabilities.

Justification for Focus on Biotechnology

Biotechnology combines a focus on immunology and genetics. Contemporary applications of biotechnology include cloning, DNA fingerprinting, and stem cell research. The study of biotechnology is at the cutting edge of science and "will continue into the twenty-first century as a major frontier of science" (National Science Education Standards, 1994, V-139). The National Science Education Standards which were published in 1994 states in Content Standard C that as a result of their activities in grades 9-12, all students should develop an understanding of the cell, the molecular basis of heredity, and biological evolution.

Summer Institute In Biotechnology

Biotechnology Works! is a summer institute, funded by the National Science Foundation (NSF), in immunology and genetics for students with disabilities, high school science teachers and high school counselors. Other than Biotechnology Works!, there are no other NSF sponsored projects that have focused on developing materials for high school science teachers and guidance counselors in the area of immunology and genetics.

The outcomes of the Biotechnology Works! project are to effect long-term changes in the: 1) participation of persons with disabilities in the sciences; 2) methods, materials, and curricula used in high school science classes, particularly in chemistry and biology; 3) practices and preparation of high school science teachers; and 4) practices and preparation of high school guidance counselors. During the summer of 1998 the following activities were conducted:

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- developed curriculum adaptations for students with disabilities in immunology and genetics
- mentored high school science students
- developed curriculum materials and information for high school science teachers
- developed career development materials and information for high school guidance counselors on promoting and encouraging the participation of students with disabilities in science careers.

The daily activities consisted of classroom time, laboratory time, informal meetings with scientists, lab tours, and informal recreational activities. Hands-on laboratories that were offered included: immunodiffusion, enzyme linked immunoadsorbent assay (ELISA), agglutination, electrophoresis, DNA extraction, DNA digestion using restriction enzymes, and horizontal gel electrophoresis.

Methodology

Subjects

Each of the 14 students who attended the 1998 summer institute participated in extended interviews. The students ranged in age from 15 to 18 years old. They included 7 females and 7 males. All students were in high school or had just graduated from high school and all had identified disabilities including physical disabilities, learning disabilities, emotional difficulties, attention deficit hyperactivity disorder, blindness, low vision, and deafness.

Interviews

Interview questions were developed based on an extensive review of the existing literature on the participation and inclusion of students with disabilities in science education. Successive drafts of the interview questions were reviewed by special education faculty, special education teachers, and school counselors. The questions were piloted with a small group of students and revised again. Finally, the interview procedure was reviewed by school counselors and two interviewers, who were school counselors, were trained.

Procedure

Permission to participate in an interview was obtained from each student and parent or guardian, when appropriate. Each student was interviewed individually by one of two school counselors. All of the interviews were audiotaped and transcribed.

Data Analysis

The qualitative analysis was guided by the work of Bogden and Biklen (1992), Miles and Hubernman (1994), Glaser and Strauss (1967). This approach to data analysis facilitates the "progressive building up from the facts" (Glaser & Strauss, 1967, p. 35). Two principles were followed during the data analysis. First, rigorous and systematic procedures were used. The investigators engaged in precise, line-by-line analyses of the interview transcripts. Transcriptions were read and reread several times. To increase reliability, two investigators carefully reviewed the transcripts and confirmed the identified themes. Secondly, the data analysis was iterative and on-going. As themes emerged they were checked and refined. The themes were noted and transcriptions were reread and sorted by themes.

Results

An analysis of the interviews found several themes related to the students' experiences. The lack of advanced science courses and science laboratories emerged as a predominant theme. In instances where science courses and laboratories were available, the subthemes of classroom environment, teacher expectations, and personal initiatives by students were interwoven. These themes are delineated and illustrated.

Availability of Science Courses and Science Labs

One striking theme that emerged was that students had few or no experiences with science labs in their local high schools. A common point that students made was the limited exposure to lab experiences. One student reported that, "This year in physics we did two labs total." Students who were enrolled in special education residential settings had similar experiences with the lack of lab experiences. One student commented, "We didn't even have a lab at _____(a special education school). Limited experiences and lack of opportunity with hands-on lab activities created problems for some students. "People look at me and say are you bored? I said, 'yes,' but I never get bored with the activities. But I get bored with the lectures."

Classroom Environment

Without a doubt, the classroom teacher is responsible for creating a positive learning environment. Three students mentioned the importance of teacher support. One student commented about the general lack of commitment to students by the teacher. "My teacher just didn't care about anything. She didn't care about any of the students." Another student felt that the lack of concern was more directly related to him, "I didn't feel that I was included in my high school science class." In contrast, one student reported very positive experiences in the classroom and described her teacher with admiration, "Mr. C. is like my best friend …people are very respectful of him." Although all students had individualized education programs, none of the students mentioned special education teachers and the support that they may (or may not) have provided.

Seven students had an identified learning disability and four of these students had a compounding attention deficit hyperactivity disorder. These students reported that frequently their special learning needs went unmet. One student with a learning disability and an attention deficit hyperactivity disorder explained, "They tell you how to do it. I won't remember what you said 30 seconds later. How do you know that I understand what you just said. It is just really easy to lose track of what you are doing. I have a real short term memory."

Students reported that some of their learning needs were met by obtaining special equipment, materials, or support personnel. As one student stated, "The lab is always such an uneasy place for anybody with a disability because it is so technical and fine." Yet, the supports and accommodations that the students identified were traditional and ordinary. Equipment needs included a lap top computer and low tech pencil grips. None of the students reported use of adapted lab equipment. No high tech equipment such as word prediction software for lab reports or talking thermometers for science units was mentioned. Materials that were provided to students with visual impariments included brailled textbooks, audiotaped textbooks, and raised diagrams. Students with visual impairments reported that brailled materials often arrived at the end of the unit. Personnel who provided support were readers, recorders, tutors, and teacher aides.

Expectations

The majority of students mentioned how the expectations of counselors and teachers had influenced their own experiences in science. One student with low vision described the impact of how her counselor affected her career path. "My counselor, I have known her for a really long time...and I said 'I really want to be an environmental engineer'. She said, 'You know you can't do that.' And that is something nobody, nobody, I don't care who you are, nobody should ever hear 'you can't.' She said, 'You can't do that' and I said 'Why?' She said, 'Well, your vision isn't good enough.' She gave me all these reasons and totally shot me down. I pouted and I was really upset. My mother said, 'Well, if she said that you can't do this, I am sure she knows....I wouldn't want you to go through this and find out no, you can't.' So I shopped around for a new career idea...."

Students found that teachers were more than willing to let them take the easy way out. "In science it is so hard and people were more willing to just let you not do things. It is easier for them to just say 'well, if this is hard for you just don't do it'. That is what I got a lot. I got a lot of that in high school, '...if this is hard for you, just don't do it'." Some teachers passed students on. "I don't do any homework hardly for any of these classes but I still pass--so it works."

Three students mentioned with pride their experiences with teachers who held high standards and expectations. "Mr. _______ said, 'Well, if this is hard for you we can fix it and make it easier so that you can do it." ("Easy" here means that the materials are accessible—not standards were lowered.) To have him say 'if this is hard for you, we can fix that. We çan make it different.'...and that is just great. It was good to know that somebody cared enough to do that and take time to do that."

Another student reported, "Science is pretty great actually because of the teacher. He was really willing to make adaptations and he listens and that just makes it easier when somebody is willing to listen to what you need. He still had some pretty hard labs...."

Similarly, "I got not very good grades in science and this teacher took me aside and said, 'You know you have real potential but you have to use it because the world does not owe you anything. You must take things into your own hands and use them yourself because I will not pass you if you sit in my class and do nothing.' He was tremendous...."

On My Own

In addition to high teacher expectations, students discussed the need for doing the work themselves. "I really do not prefer (to have) people read things to me because reading is a thing that is subject to interpretation. Some people make interpretations of what they read; therefore, I like to read (it myself)."

Taking notes was another area that students identified. "…I really don't like taking the easy way out. I feel like if I get someone's information, I don't' feel like I end up understanding the information that is represented in the lab. I wish that instead of just having to get somebody's paper and basically copying it they'd figure out a way that I could be doing something and use my own energy.

Discussion

Despite recent science education, students with disabilities report continued difficulties in their own science education programs. The most striking findings are that students have few, if any, science laboratory experiences in both regular education and specialized settings. Although students were eager to fully participate in science and to take advanced science courses, these experiences were limited or simply were not made available to them in their own schools.

At each point in their pursuit of science education, students encountered frustration and lack of accommodations and supports. When students did participate in science labs, they had difficulty in obtaining adapted materials and equipment. Brailled materials, when requested, did not arrive on time. Braille labels were not provided for common laboratory equipment. Laboratory equipment that could help make the laboratories accessible was not provided. Teachers gave a long series of directions orally, rather than demonstrating procedures. Commonly available assistive technology and augmentative communication devices, which could provide much needed assistance, were not mentioned or were not available.

Students frequently talked about their science teachers' expectations. Students valued teachers who held high standards and had equally high expectations for them as learners. Even though students acknowledged that science classes were "hard," they valued teachers who were willing to help them access the material and the equipment. Students did not seem to be concerned that their teachers might not be familiar with particular disabilities; rather, the most important factor was that the teacher was willing to work with them to make the necessary accommodations. Special education teachers who could provide support and resources were not mentioned by the students.

Finding ways to become less dependent on others was a theme that was discussed. Students wanted to find ways to complete assignments and lab activities by relying less on others for the information. A wide variety of common adaptations and assistive technology now exists to make this possible.

In the Biotechnology Works! summer institute adaptations were made to science laboratories so that all students could participate and, more importantly, so that each student could experience the "Ahah's" of science. Commonly used adaptations that were developed and implemented included:

- In the pre-lab session for each lab, each student and teacher received a notebook with the purpose, list of materials, procedure, and an illustrated flowchart. A large point size, simple font style, and double-space lines were used.
- All the sign language interpreters were given teacher notebooks at the beginning of the week so that they could review some of the technical scientific concepts and vocabulary.
- A variety of written formats for explaining the labs: overhead projector, green chalkboard with yellow chalk, cream-colored chart paper with wide black markers, student and teacher notebooks, and braille.
- Definitions of all terms were posted for everyone to see and were read out loud during the pre-labs. Questions that students or teachers asked during the labs were abbreviated and posted, along with abbreviated answers.
- Test tubes and other laboratory equipment were color-coded whenever possible.
- Braille labels were affixed to laboratory equipment whenever appropriate.
- The aisles of the classrooms were kept free of clutter for easy accessibility; we planned where the various heating and refrigeration units would be located to maximize traffic flow.
- All overheads for the pre-labs and the actual labs were photocopied on paper and given beforehand to the deaf students, who were then able to take notes more easily as they watched the sign language interpreters.
- A variety of pipettors were available during each lab so that each student could select one that was comfortable to use. Furthermore, the pipettor holder designed and built by Don's high school biology students was in constant use.
- A slip-resistant surface ("Benchcoat") was used at each lab station.
- Large-sized petri dishes and simple templates were used whenever appropriate.
- The staff tried to be as specific as possible when giving an explanation. The teacher presenters and the lab assistants made a concerted effort to eliminate vague phrases such as "this," "over there," and "just like this one" from their vocabulary.
- Many models and analogies were used to explain the general concepts for each lab. For instance, soil sifters with different-sized openings and objects were used to demonstrate the agarose gel electrophoresis of different-sized pieces of DNA. Plates of cooked spaghetti and tomato sauce helped to clarify the concept of spooling DNA for DNA extraction.
- Each lab was placed in context (for instance, using a description of a crime scene or comparing a specific procedure to a pregnancy test) so that there would be a reason for doing each lab.

There is still much more work that needs to be done. Strategies that make science, at all educational levels and in each domain, accessible need to be developed and shared with educators. Science teachers and special education teachers should be encouraged to have high expectations for all students, including students with disabilities. Including students with disabilities in science makes sense; including students with disabilities makes science richer.

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PERSONALIZED OPPORTUNITIES TO LEARN (POTL): ACHIEVING TO HIGH STANDARDS FOR ALL STUDENTS

Two guiding ideas were key in Maine's standards development process - all children can learn; and within our new education system, all children need fair opportunities to achieve the Learning Results. At the core of a new plan for education in Maine, the Learning Results require that critical attitudes and beliefs be present to guide our work:

- High standards must be for ALL students.
- All activities to support implementation must be designed around what students need in order to learn (student-centered).
- State and local assessments must provide multiple means and opportunities for students to demonstrate what they know and can do.
- Quality, comprehensive learning opportunities are needed at all levels of the system.

Maine's high standards, the Learning Results, are structured in three levels. The first level identifies broad performance goals for all students, called Guiding Principles. Students are expected to be: clear and effective communicators; self-directed and life-long learners; creative and practical problem solvers; responsible and involved citizens; collaborative and quality workers; and integrative and informed thinkers.

The second level of the Learning Results articulates knowledge and skills in eight subject areas: English Language Arts; Modern and Classical Languages; Social Studies; Visual and Performing Arts; Science and Technology; Health and Physical Education; Mathematics; and Career Preparation The results in these areas, Content Standards, lead directly to the achievement of the Guiding Principles.

Lastly, Performance Indicators, or checkpoints, exist at the PK-2, 3-4, 5-8, and secondary levels. They are intended to guide local curriculum development and assessment at both state and local levels. The strong relationship between the Guiding Principles, Content Standards, and Performance Indicators, along with the development of personal learning plans will make personalization of instruction and assessment a realistic expectation for each student.

Providing a structure for personalizing instruction and assessment, however, will not lead directly to attainment of the Learning Results. Resources, practices and conditions driven by student needs must also be in place. These components provide all students with fair opportunities to achieve the Learning Results. A preliminary report reflecting input from stakeholders throughout Maine recommends infrastructure changes for all levels of the public education system. In this visionary educational system, opportunities needed by students to achieve high standards are defined and used to personalize education. To ensure high performance by ALL students, the classroom, school and system cultures are dovetailed with student needs. In this new infrastructure it is widely understood that education is an "infinitely expandable unlimited resource" and that one child's program does not have to come at the expense of another's.

It is possible to understand education as an unlimited resource by using a systems framework such as Peter Senge's model. This model consists of multiple interrelated and interdependent components (see Figure 1.). In an educational system, if a new *theory, method, or tool* (such as cooperative learning) is adopted on the basis of supporting a given *guiding idea* (by working collaboratively, all children can achieve to high standards*)*, it necessitates a change in the *infrastructure* (providing related staff development.

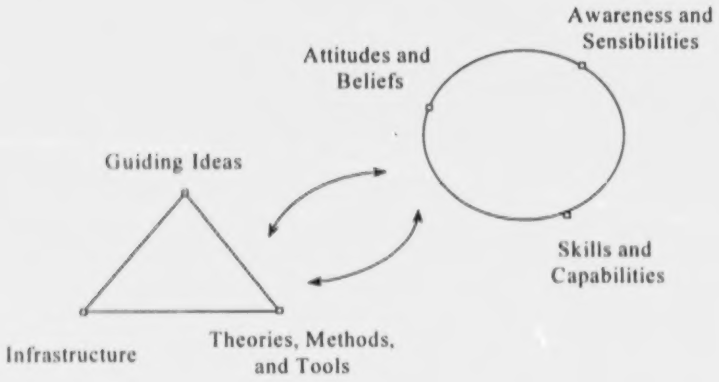


Figure 1.

The change in infrastructure results in an increase in the *skills and capabilities* of the staff (know how and why cooperative learning works), and ultimately impacts both their personal *awareness and sensibilities* (see new classroom possibilities in old situations) and their *attitudes and beliefs* (all children bring to and gain knowledge and skills within a collaborative learning experience).

In Maine, the *guiding idea* that ALL students can learn and achieve high results led to state level *infrastructure* changes including legislation expecting achievement of the Learning Results, and the recommended development of comprehensive systems of assessment and professional development.

The *theories, methods, and tools* of the system will ensure stakeholder involvement in the process, maintain local control, and hold schools accountable for student achievement. Tools for comprehensive planning, such as the one described in this article, and other frameworks for learning results implementation are also being developed. These will be available for local units to adopt and implement if it meets their needs.

For each restructuring local system to move forward, one essential question must be answered - how can the design of curriculum, instruction, and assessment that moves students toward achievement of the Learning Results also assure that all students are provided fair opportunities to achieve these results? The answer lies in building on Senge's systems thinking where each student is recognized as an individual system, and in using a collaborative team structure for planning. Using these concepts, each student's needs can be delineated in a way that will guide the design of the classroom, school, and system environments to assure fair opportunities to learn.

Seeing the Student as a System

Information related to the deeply personal and intangible facets of the Senge circle are gathered in a Student Profile based on the components of the MAPs process. The components of the triangle, documented through the completion of a Personalized-Opportunities-to-Learn (POTL) template, guide planning teams as they investigate and discover critical information about a student that will inform the development of his/her Personal Learning Plan.

Looking at the student as a system, the information generated in the triangular portion of the Senge diagram includes aspects that should be integral in planning for each student. It describes the face the student presents to the world ... the *infrastructure* (his/her physical structure and needs), the *guiding ideas* (expressed attitudes and beliefs of the student), and the *theories, methods, and tools* (his/her interaction with the environment). The information in the circular portion of the diagram is no less important but addresses the student's internal attitudes and beliefs, awareness and sensibilities, and skills and capabilities.

The following example of Todd, a Maine student, demonstrates how to develop personalized instruction for a student with complex needs. Using three planning tools, a Student Profile, a POTL template, and a Performance Indicator Planning Grid, the team identified what Todd needed in order to achieve the Learning Results.

First, initial information specific to the student is gathered. The Student Profile in Figure 2 provides a structure to acquire focused, essential information. The team developing this profile, including the family and whenever possible the student, may choose to address these areas during a parent conference, regular planning session, or any other formal or informal meeting opportunity. Gathering information directly related to the components of the circle in Senge's diagram brings forth some of the personal and intangible aspects of Todd as an individual.

Student Profile

Name: Todd

History: Physically aggressive, verbally abusive, physically large, 15 years old, question of mental health issues.

Dreams: To be a member of my community without people being afraid of me and having friends.

Nightmares: Getting locked up. Something would happen to my mother and there would be no one who cares about me or advocates for me.

Personality/Characteristics: Knows he is bright, enjoys humor, likes to laugh, needs to have some control (i.e. making choices), fragile self-esteem, doesn't trust others, fearful of joining groups.

Likes: Computers, computer games, electronics, his family, physical activity (especially " shootin' hoops")

Dislikes: Losing, confrontation, being challenged, being laughed at, rejection, showing his limitations (masks them very well)

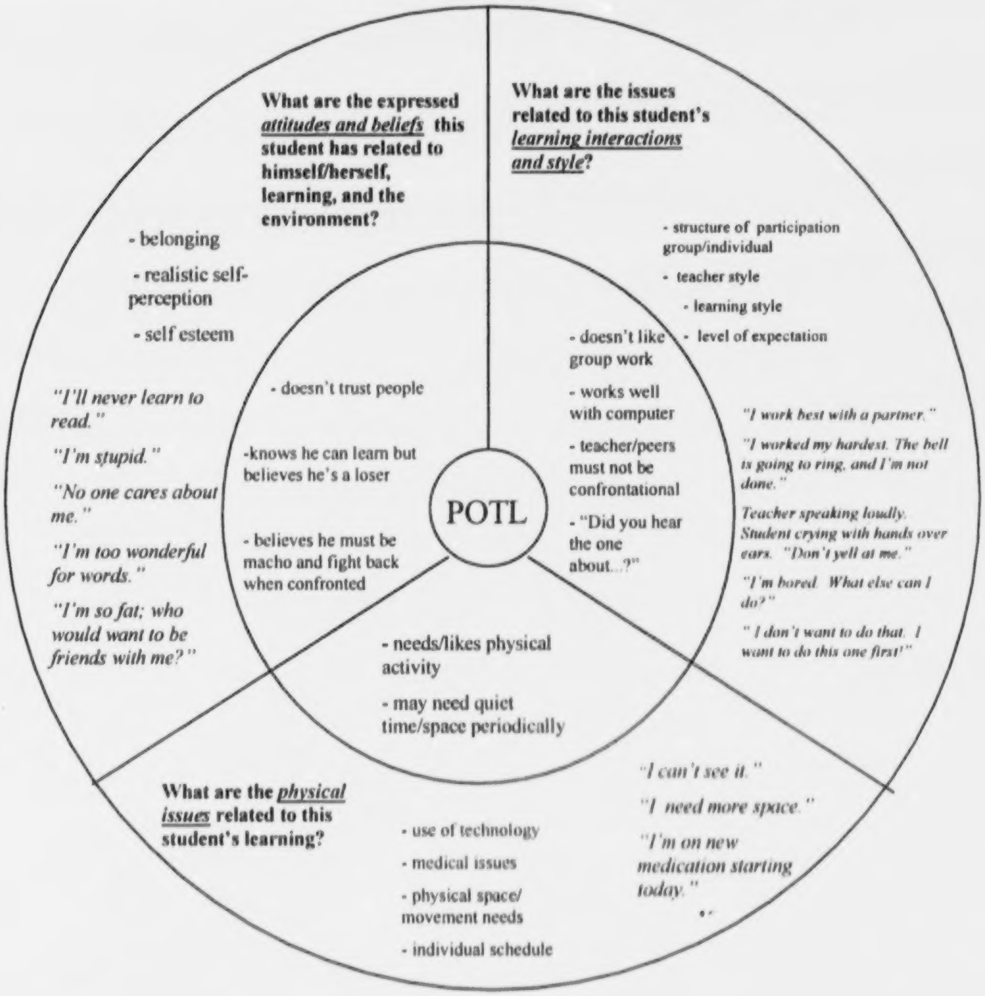
Strengths: Computers, physical coordination, memory, knowledge of music

Educational Needs: Academics, build self-esteem, social skills, communication

Figure 2.

In personalized planning for Todd, information gathered by completing the POTL template (Figure 3.) Also provides crucial and comprehensive information on how he functions as a system. His personal profile and his POTL combine to provide the information needed to personalize instruction.

Personalized Opportunities to Learn (POTL)


What are the expressed attitudes and beliefs this student has related to himself/herself, learning, and the environment?
What are the issues related to this student's learning interactions and style?
What are the physical issues related to this student's learning?
POTL
- belonging
- realistic self-perception
- self esteem
"I'll never learn to read."
"I'm stupid."
"No one cares about me."
"I'm too wonderful for words."
"I'm so fat; who would want to be friends with me?"
- doesn't trust people
-knows he can learn but believes he's a loser
- believes he must be macho and fight back when confronted
- structure of participation group/individual
- teacher style
- learning style
- level of expectation
- doesn't like group work
- works well with computer
- teacher/peers must not be confrontational
- "Did you hear the one about...?"
"I work best with a partner."
"I worked my hardest. The bell is going to ring, and I'm not done."
Teacher speaking loudly. Student crying with hands over ears. "Don't yell at me."
"I'm bored. What else can I do?"
" I don't want to do that. I want to do this one first!"
- needs/likes physical activity
- may need quiet time/space periodically
- use of technology
- medical issues
- physical space/ movement needs
- individual schedule
"I can't see it."
"I need more space."
"I'm on new medication starting today."

Todd

M. Baker, D. Gervais 1996

Figure 3.

A working knowledge of local standards, in this case Maine's Learning Results, is needed to guide the personalization process. Outlined in the planning grid (Figure 4.) are the links among the Performance Indicator being addressed in Todd's secondary classroom and the related Health and Physical Education Content Standard and Guiding Principles. It is important to note that this example is not realistic in that it is designed around only two performance indicators. In real classrooms, the instructional unit would be based on clusters of performance indicators, integrated within and across content areas.

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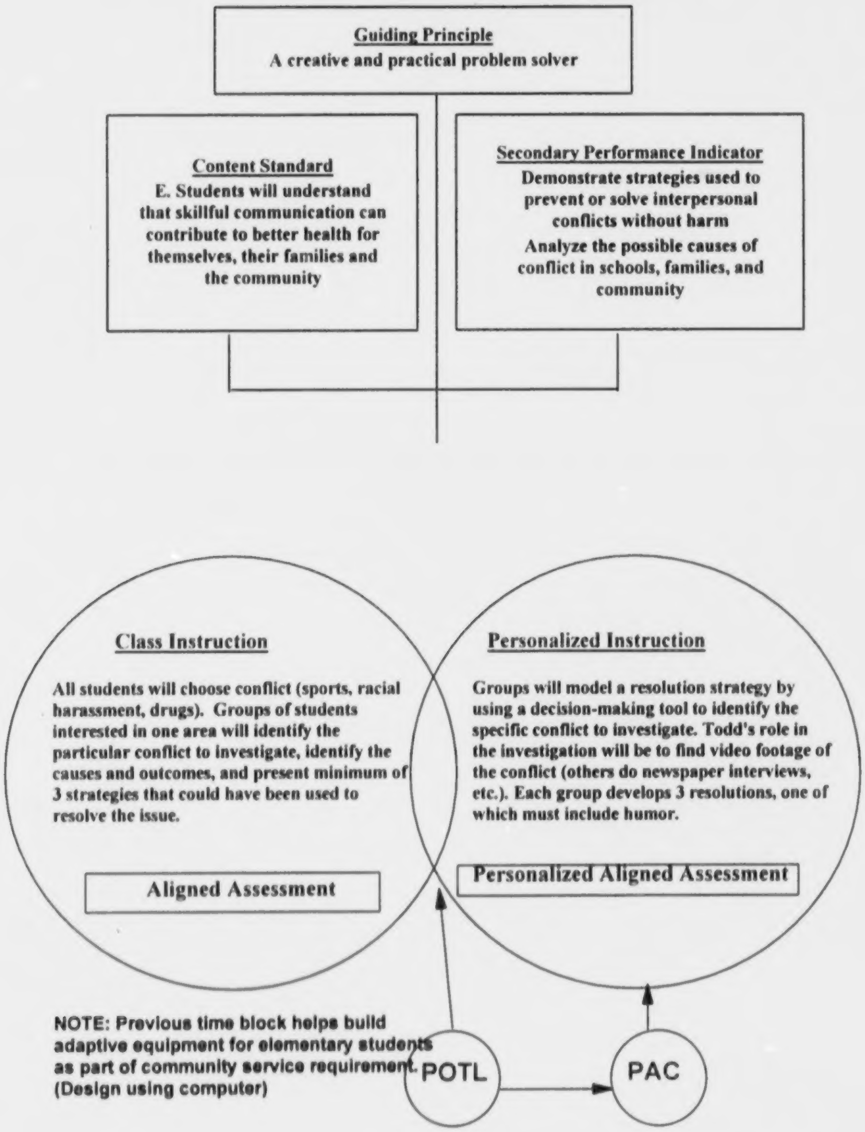
The planned classroom activity is only one piece of instruction designed to move Todd's class toward achievement of this performance indicator. To provide Todd with fair opportunities to achieve, instruction is personalized as seen in the planning grid. These opportunities are designed based on Todd's needs as identified in the Student Profile and POTL templates, however, educators have found that what begins as personalization for a particular student often leads to benefits for other students in the classroom as well.

Health and Physical Education Communication Skills


Guiding Principle
A creative and practical problem solver
Content Standard
E. Students will understand that skillful communication can contribute to better health for themselves, their families and the community
Secondary Performance Indicator
Demonstrate strategies used to prevent or solve interpersonal conflicts without harm
Analyze the possible causes of conflict in schools, families, and community
Class Instruction
All students will choose conflict (sports, racial harassment, drugs). Groups of students interested in one area will identify the particular conflict to investigate, identify the causes and outcomes, and present minimum of 3 strategies that could have been used to resolve the issue.
Aligned Assessment
Personalized Instruction
Groups will model a resolution strategy by using a decision-making tool to identify the specific conflict to investigate. Todd's role in the investigation will be to find video footage of the conflict (others do newspaper interviews, etc.). Each group develops 3 resolutions, one of which must include humor.
Personalized Aligned Assessment
POTL
PAC

NOTE: Previous time block helps build adaptive equipment for elementary students as part of community service requirement. (Design using computer)

Figure 4.

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Addressing student needs through this comprehensive planning process has implications for all levels of the educational system. A student-centered learning system will impact the student, the classroom, the local school system, and the community. The right of all students to achieve high standards will be accomplished in a climate and an environment which embrace personalized planning and collaborative team work, and where there is a shared vision of what students should know and be able to do by the time they complete their public school education.

Student-Centered System of 2002

At the student level...

- Every student truly recognizes him/herself as a life long learner, always striving for further accomplishments of the Learning Results.
- Students are aware of and understand where they are headed educationally and are involved in their own educational planning.
- Students take responsibility and are actively involved in learning and demonstrating knowledge and skills.
- Students work toward the same curriculum goals, while experiencing individualized instruction and assessment, documented in a Personal Learning Plan (PLP). Along with their families and teachers, students actively participate in a personal action research cycle that informs revisions to their PLP.
- As with all other students, students with identified disabilities have PLPs with the Guiding Principles as the goal areas. Individual Education Plan (IEP) requirements of old are embedded in the PLP.
- Assessment of a student for identification of a disability reflects data available in his/her learning plan. The personalized assessment choices information drives the process.

• At the educator/classroom level...

- Educators are mentors who guide the learning process.
- As all students achieve the Learning Results, educators work together in ever changing and creative ways. Previously segregated disciplines such as regular education, special education, English as a second language, homeless education and education of disadvantaged students have merged into one collaborative system.
- Educators, as members of planning teams, understand the Learning Results, design implementation and assessment strategies and are aware of the tools and frameworks available for support.
- A great deal of new learning continues to occur for all educators. Staff development based on strengths and needs is still critical.
- Family, student, educator, business and community input guide the staff development plan and system. Learning opportunities that emphasize new technologies and approaches proven effective in helping all students reach the Learning Results are available.
- Some people have experienced a shift in attitudes and beliefs about teaching and learning. New knowledge resulting from an ongoing action research cycle acts as a springboard to help planning teams design creative ways to personalize education for all students.
- Classroom schedules are designed to ensure fair opportunities to learn for all students.
- The physical structure of the classroom, the educational tools and materials, the rhythm of the day, the strategies used and the teacher's style are guided by the demands of personalized education for students to ensure they all achieve the Learning Results.
- Time is maximized to facilitate avenues for teaming and collaboration.

At the local school system and community level...

- Community members and businesses are actively involved in supporting all their students in achieving the Learning Results.
- Building and system schedules provide time for planning teams to work.
- The configuration of teams varies, but planning teams -- including families and whenever possible the student -- are critical to the success of all students in achieving the Learning Results. The teams are student focused and all members really know, understand, and *accept* the students.
- Student centered local assessment systems exist, are fully implemented and inform teaching and learning.
- Programs and services needed to support all students in achieving the Learning Results are identified, developed, and addressed in the staff development plans.
- Resources, realigned to ensure that all students have what they need to maximize their opportunities to learn, drive budget development. A comprehensive technology plan addressing the needs of all students plays a critical role.
- Local school systems have aligned their curriculum, instruction and assessment with the Learning Results.
- School boards have assessed their previously developed policies, procedures and practices for support of the Learning Results and made revisions accordingly. A process is in place to ensure that new policies also support this effort.
- Schools are educational service centers. Local schools and their communities have collaboratively created a unified system of comprehensive services to support students and their families. Schools and facilities are used in innovative and flexible ways and provide avenues for learning through the availability of technology.
- The shared vision of what students should know and be able to do by the time they complete their public school education and the provision of conditions, practices, and resources necessary to provide fair and equitable opportunities for achievement guide decision making.
- Communities and businesses are classrooms and learning resources.

At the state level...

- Guidance, support and intensive staff development for local systems are ongoing at the state level.
- Pre-service teacher training provides future educators with the knowledge, skills and strategies they will need to guide all students toward achievement of the Learning Results.
- The Comprehensive Assessment System is clear but fluid. All assessment choices are aligned with the Learning Results.
- Accountability is shared by all stakeholders.
- Essential programs and services are based on helping all students in the achievement of the Learning Results and drive equitable, predictable and adequate school funding.
- Strong connections exist linking all who impact education (i.e. universities, professional organizations, professional development agencies, state trainers, state agencies, etc.)
- All the work of the Department of Education teams is aligned with student achievement of the Learning Results.
- Staff development, based on the current needs of the State agency staff to support the Learning Results, is ongoing.

In the year 2002 when all of this is accomplished and all students are achieving higher standards, the key to success will have been a shared vision of student-centered learning and clear, effective communication within and between all levels of the system. This new communication pattern will account for the quality, content, and presentation of the information being communicated, as well as the structures, relationships, and technologies that facilitate sharing and learning. Everyone, at every level, must be part of a learning community if the vision that ALL students will achieve the learning results is to become reality.

Epilogue: In 2002 Todd's reality is very different than it would have been in 1902 or even 1992. The last few days of his 2002 daily computer log capture what his life is like:

December 21st The world is just buzzing with excitement. Chris, Mom and I went to the "Celebration of Holidays" concert at Fairview School. That is the school that "Interface", the computer company I work for, has adopted. I have been thinking of asking the other members of my team their thoughts on my volunteering at the school. Anyway, the concert was fun and Mom loved to see all the decorations and the little kids. Chris came back to my place and listened to the latest music clips available on the Internet.

December 22nd We had a party at work today to celebrate the holiday season. I was uncomfortable at first with all the people but then the other 3 people in my team and I played ping pong in the lounge and had a good time. It was nice not to have to leave early for class. Both my community college evening classes are canceled this week!

December 24th WE WON! My YMCA basketball team is in the finals. I ran into Randy Jones as I was leaving and he asked me to be on his softball team this spring! They had a pretty bad season last year but I think it will be a blast. Randy says that Jon P and Jane R -- they graduated with us -- are getting married on New Year's.

December 27th I spent the day lounging around, listening to music, playing with the cat and fooling around on the computer. I don't know what I would do without this trusted friend. My life here and at work sure would be different! Mom found some discs while she was cleaning out my old room a couple of weeks ago. It was cool to browse through the information. I found a disc from 1995-96. It had lots of stuff from school but one thing really caught my eye. It was the dream I had written for myself that year. It read "To be a part of the community and not have people be afraid of me. To have friends." No wonder life is so good. I have my dream!

December 31st I went to the New Year's festivities in the city. I didn't stay long enough to see the fireworks. There were too many people, it was too cold and I almost got in trouble. I was talking with some friends when this jerk started giving us a hard time. I was just about to let him have it when I realized that I didn't have to hit him. I guess that "dealing with conflict" stuff I learned at school really has changed me.

January 1st Recently a person I chat with on line asked me to describe what I want in the future. I had to think about it for a while then sent a message saying: I want to always have a job I like and am good at. I want to be on the Board of Directors at the Y and change some of the things they offer (add conflict resolution, study skills and technology for example). Mostly, I want a family, to have children and to coach their basketball teams. I can't wait for my children to go to school! Here's to the future.

As we move into the future with Maine's Learning Results, we will continue to share success stories such as Todd's and will always remind those who join us in this work that change is a long process which happens one conversation at a time. Continue the conversations and join us on this exciting journey.

References: MAPS, Lusthaus & Forest, 1987, McGill Action Planning System

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EFFICACY OF TEACHERS AND EXPECTATIONS FOR SPECIAL EDUCATION STUDENTS IN INCLUSIVE SETTINGS

Teacher Expectations and Efficacy

A relationship exists between general education teachers' expectations of special education students and their feelings of professional efficacy in addressing the diverse needs of the special education students in their own classroom (Zimmerman, 1988). With the emphasis on inclusive schools, the relationship between general education teacher expectations and the performance of the students labeled "special education" becomes paramount.

The renewal of the Individuals With Disabilities Education Act (IDEA), requires school districts to move toward inclusive school settings. Districts must address the mandate which calls for the least restrictive environment for students eligible for special education. In the movement toward inclusive schools, general education teachers play an essential role in the success of the special education student in their classrooms.

Research has shown that teacher expectations and teacher efficacy have an influence on the achievement and success of students. Didham and Stewart (1989) found that students' performance and self esteem are influenced by the attitudes of their teacher. In addition, the teacher's unconscious biases or treatment of special education students may lead to the self-fulfilling prophecy of failure for the student. General education teachers may have lower expectations for the special education students in their classrooms. If special education students are to succeed in an inclusive setting, teachers must communicate to them that they can be successful. As more special education students are being integrated into general education classrooms, it is important that teachers be prepared to address the diverse needs of all students.

Purpose of the Study

The purpose of this study was to examine personal and teacher efficacy of general education teachers who have special education students in their classrooms and teacher expectations of special education students. The following hypotheses were tested: there will not be a significant within-group, relationship among teachers' expectations for students in their classrooms; there will not be a significant relationship between teacher efficacy and personal efficacy; and there will be a significant relationship between efficacy and expectations.

For the purpose of this study, personal efficacy is the belief that the teachers possess the skills and abilities to influence their students' learning; teacher efficacy is the belief that the teacher holds, regarding the relationship between teaching and learning; teacher expectations are defined as "teacher perceptions of performance, achievement, ability, level of educational attainment . . . general social development, peer relations, relations with adults, and personality attributes" (Stegemiller, 1989, p. 8).

Administration of the Survey

Participants included 87 general education teachers in their first or second year of teaching. The teachers were administered a survey to identify their perceptions relative to personal efficacy, teacher efficacy, and teacher expectations for special education students. The survey requested that participants respond to demographic questions and to 29 statements across factors of personal efficacy, teacher efficacy, and teacher expectations. Participants were presented a statement and requested to check a 1,2,3,4, or 5 based on a 5-point Likert scale: 1=strongly disagree, 2= somewhat disagree, 3= neither agree or disagree, 4= somewhat agree, and 5= strongly agree.

Results of the Study

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Means and standard deviations were computed for each statement across the three factors of personal teaching efficacy, teacher efficacy, and expectations. The highest means within factor 1--personal efficacy were reported for questions related to the ability to teach difficult students (m= 4.07), improving grades with effective teaching (m= 3.99), and determining appropriate instructional level (m=3.95). Relative to factor 2--teacher efficacy, the highest means within this factor were reported for questions related to teachers not being as powerful an influence (m= 4.45) as the home (m= 3.59), and the teachers being limited on what they are able to accomplish with special education students (m= 3.34). In factor 3--teacher expectations, the highest means were reported for questions related to special education students not being likely to go to college (m= 4.07), special education students having the ability to succeed in general education classrooms (m= 3.70), and other students performing better than special education students (m= 3.54).

Reliability coefficients were computed within each factor. Factor 1--personal efficacy, composed of 12 statements, revealed a significant reliability coefficient of (r= .7749). Factor 2--teacher efficacy , composed of seven statements, revealed a reliability coefficient of (r= .4913). The ten statements related to factor 3--teacher expectations revealed a reliability coefficient of (r= .4748).

Pearson correlation coefficients were calculated for the three factors with one another and factors 1, 2, with statements in factor 3--teacher expectations. Results indicated a significant correlation between factor 2--teacher efficacy and factor 3--teacher expectations (r= .301). Correlations were also present for factor 1--personal efficacy and questions related to teacher expectations influencing special education students': graduation rate (r= -.252), mastery of concepts (r= .255), and success rate (r= .338). Significant correlations were found when crossing factor 2--teacher efficacy and teacher expectations on students' inability to produce the same quality of work (r= -.371), not graduating from high school (r= .268), unlikely to go to college (r= -.318), incapable of mastering same concepts (r= -.265), and performing better than general education students (r= -.334).

Significant relationships were shown between factor 3--teacher expectations and eight of the ten expectation questions, including special education students: obtaining A and B grades (r= .457), receiving lenient grades (r= -.407), inability to produce same quality work (r=-.407), not graduating from high school (r= .506), not likely to go to college (r= -.398), acquiring same amount of knowledge (r= .340), performing better than other students (r= -.377), and working harder than other students (r= .533).

Discussion and Recommendations

Results showed significant reliability within factor 1--personal efficacy statements. In further examination of the responses to factor 1 statements, there was evidence of a high personal efficacy with regards to the types of behaviors teachers exhibit with all students. Day-to-day expectancies of a teacher, to be able to reach difficult students, improve grades, adapt curriculum to student's level, and redirect disruptive behavior were all highly rated. Statements that related to specific skills or training in addressing the needs of special education students in their classrooms were rated lower. This finding would support the two possible barriers to effective inclusion that Lambert, Dodd, Christensen, and Fishbaugh (1996) identified. The first being that general education teachers have little or no training in meeting the needs of students with disabilities and second that they perceive themselves as lacking special skills for teaching special education students. Perhaps this contradiction relates back to general education teachers fearing inclusion because they feel insecure that they will have to do this difficult undertaking with little or no training and support (Lewis, 1994).

In examining ratings for factor 2--teacher efficacy, findings suggested that teachers do not perceive themselves having as much of an influence on their students as the home. Teachers are limited in what they are able to accomplish, yet, a teacher with good instructional ability may reach most students. Furthermore, teachers did not feel that motivation determined a students' success.

Factor 3--teacher expectations revealed that teachers expect their special education students included within their classroom to have the ability to succeed, are capable of mastering concepts presented, and are able to graduate from high school. The hypothesis that lower expectations do exist was evidenced with regard to special education students not possessing the same amount of knowledge as other students, that other students perform better than these students, that special education students are not likely to receive A and B grades, nor go on to college.

Correlations between factors 2 and 3 found teachers responding similarly, partially supporting the hypothesis that there will be a significant relationship between efficacy and expectations. This finding was only present with teacher efficacy and teacher expectations, however not with personal efficacy. In addition, the teachers surveyed did show a distinction between their personal ability to affect students and the ability teachers have to influence students, in general. Personal efficacy statements were scored higher, thus indicating that many teachers believe that they personally could have a strong influence on students' success. This effect was present, even in light of the finding, that the participants felt teachers, in general, had less influence than did the home environment.

In attempting to answer whether or not inclusive environments are positive, the relationship between teacher expectations and the impact it can have on students' success are vital. Districts must provide inservices for the teachers lack training or do not feel confident in their ability to teach special education students, and in turn, their students potential will not be maximized. A strong personal and teacher efficacy can contribute to students' success. Training and support must be provided in an inclusive setting in order for teachers and students to be successful.

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DEVELOPING PREREFERRAL TEAMS IN YOUR SCHOOLS AND KEEPING THEM THERE!

Using prereferral intervention teams have become a preferred educational practice for educators within our Schools (Chalfant & Pysh, 1989; Dodd, Nelson, Spint, 1995; Hayek, 1987; Kruger, Struzziero, Watts, & Vacca, 1995; Strickland & Turnbull, 1990; Walsh, 1989). These teams have been used successfully to assist general educators with the academic and behavorial concerns they encounter with their students in the classroom. In particular, researchers have found that the use of prereferral teams within a school can be extremely effective in reducing the number of referrals to special education services (Chalfant & Pysh, 1989; Dodd, Nelson, Spint, 1995; Fuchs, Fuchs, & Bahr, 1990; Hayek, 1987; Howard, 1984; Kruger, Struzziero, Watts, & Vacca, 1995; Morgan & Jenson, 1988; Rivera & Smith, 1997; Smith, Polloway, Patton, & Dowdy, 1998). Additionally, the teams have been extremely effective in helping to maintain a student, who is encountering academic or behavioral problems, within the general education setting.

The prereferral process involves several steps. Generally, the teacher, who has concerns about a child's behavioral or academic performance, refers the concerns to the prereferral team. Following the referral, the teacher, who initiated the concern, meets with the school-based prereferral team members to discuss the concerns, interventions that have been tried and the results of such interventions. After this discussion, the teacher and members of the team engage in problem-solving activities to assist the teacher with the concerns. Together, these professionals either generate new interventions for the teacher to implement, recommend the teacher continue to use the interventions that have been used with the student for an additional time period, or a combination of both. The team may meet again in one or two weeks with the teacher to discuss results of the prereferral interventions. Changes or continuation of the interventions may be recommended by the team. Typically, these interventions are tried for approximately six to nine weeks to determine effectiveness (Chalfant & Pysh, 1989; Hayek, 1987; Smith, Polloway, Patton, & Dowdy, 1998) Thus, if the prereferral intervention is successful, the student will not be referred for a special education assessment. Since assistance is being provided in a timely manner to the teacher and consequently the student, the inevitable frustrations the teacher and student would have encountered is reduced.

The prereferral teams have had a significant positive impact nation wide (Chalfant & Pysh, 1989; Dodd, Nelson, Spint, 1995; Hayek, 1987; Howard, 1984; Ingalls & Hammond, 1996; Kruger, Struzziero, Watts, & Vacca, 1995; Morgan & Jenson, 1988; Rivera & Smith, 1997; Smith, Polloway, Patton, & Dowdy, 1998; Strickland & Turnbiill, 1990 Walker & 8hea, 1995). More and more schools within United States are attempting to form school-based prereferral teams. All too often, however, the teams remain in operation for only one or two years and then are no longer supported. Following this short period of time, frequently the prereferral teams and their operations are dissolved within the school system (Kruger, Struzziero, Watts, & Vacca, 1995).

Several critical factors have been cited as being instrumental in promoting the successful continuation of prereferral intervention teams. Team members should receive administrative support for their activities (Chalfant & Pysh, 1989; Hayek, 1987; Kruger, Struzziero, Watts, & Vacca, 1995) realize the purpose for their team activities (Chalfant & Pysh, 1989; Harris, 1995; Kruger, Struzziero, Watts, & Vacca, 1995; Walsh, 1989), receive adequate training in implementing prereferral interventions (Chalfant & Pysh, 1989; Harris, 1995; Hayek, 1987; Kruger, Struzziero, Watts, & Vacca, 1995; Walsh, 1989) and learn effective "teaming" skills (Hammond, Ingalls, Olson, Greenfield, & Edson, 1995; Ingalls & Hammond, 1996). Other authors noted the importance of feeling supported by their professional colleagues within their school for their efforts (Chalfant & Pysh, 1989; Kruger, Struzziero, Watts, & Vacca, 1995; Walsh, 1989). Other logistical issues surround compensation for professional time. Harris (1995) found teachers wanted meetings held within the school day hours, receive stipends for their extra time, and have their involvement be applied to service requirements. Other researchers emphasized the importance of utilizing an efficient system of operations within their school for implementing the prereferal program (Chalfant & Pysh, 1989; Hayek, 1987; Walsht 1989). They cited such critical activities as including efficiency of teacher time, adequate teacher training, and effective communication between professionals.

The purpose of this study was two-fold: a) to further investigate common causes for prereferral teams to be discontinued within schools and b) to investigate effective methods being used by schools to maintain the prereferral teams. This project involved implementing a follow-up study with 10 prereferral teams within a rural, north western state. The 10 teams were originally studied during a multi-year project of which they were supported in forming their prereferral teams (Hammond, Ingalls, Olson, Edson, & Greenfield, 1994) and followed to monitor their success at assisting general education teachers in helping students in academic and behavioral areas and in reducing the number of referrals to special education (Ingalls & Hammond, 1996).

To address these 2 areas of study, the following questions were asked of members of each of the teams and a key administrator with the tri-school district:

1. How many of the original 10 prereferral teams within your districts are still in tact and are operating as prereferral teams?

2. How many now teams have developed in your districts?

3. Describe in some detail the function and membership of your prereferral team, i.e. what is the purpose of your team and who are the professionals on the team?

4. Of the prereferral teams in place, why do school personnel believe they have been successful in maintaining their prereferral team, i.e. are there specific strategies used to maintain the team year after year?

5. What challenges has your prereferral school team faced over the years in continuing to keep your team at your school?

6. Many schools attempt to form prereferral teams, however, they face a variety of challenges. Unfortunately their ambitions to operate these teams decrease and the teams are discontinued. What major one or two points of advise would you give to other school personnel who are initiating prereferral teams at their school to assist them in achieving long term success at maintaining their teams?

This study used a qualitative design to investigate the 2 areas. The 6 questions were given to the special education director. He was instructed to respond to questions 1 and 2, since these questions were addressing administrative issues, and the remaining 4 questions were to be completed by members of each of the teams. Additionally, team members were informed that a designated representative(s) could Complete the responses to the 4 questions, however, the responses must be representative of the whole team. Upon obtaining responses from participants, common patterns of response to questions 3 through 6 were identified. Those responses were used as summative data to answer the 4 questions.

There were 10 prereferral teams who responded to the 4 questions. Each team contained approximately 7 to 9 members. The majority of team members were general education teachers with the remaining members being a representative from the resource room, Title 1, social worker/guidance, speech and language, and administration.

Findings: Number of Prereferral Teams Maintained and Developed (Questions 1 and 2). According to the special education director, 8 of the 10 teams have remained in operation. The other 2 teams, which are located at high schools, have struggled to maintain their operations. One of these teams is not functioning at this time and the other team has changed its focus to monitoring "at risk" sophomores who are in danger of not earning enough credits to graduate. The 8 teams, which are in operation, function on an "as needs" basis providing school support when required. The director indicated that 1 new team has developed within their tri-school district.

Team Function: (Question 3). Team members stated their primary function of operation was to provide school personnel with direction and support in meeting the individual needs of students. They also believed it was important for their team to make sure all appropriate student documentation had been completed prior to referral to special education services. The membership of each of the teams was discussed in a previous section describing the participants of this study.

Maintenance: (Question 4). Team members discussed the reasons they believed they were able to successfully maintain their teams. These strategies include the following:

1. The general education staff participation was conducted on a rotation basis with 2 members serving for a 2 year term and then being replaced with 2 new members. This rotation reduced the chance that members would "burn-out" or lack interest in the team's operations.

2. School personnel realized the benefits of the prereferral team for both them and the students. They used the team regularly to seek assistance and they believed their concerns would genuinely be addressed.

3. The teams are multidisciplinary in membership and transdisciplinary in operation, thus they are not static and they utilize the various strength of the members.

4. The teams used a tracking system to ensure that efforts begun 1 year would transition to the next year.

Challenges: (Question 5). The teams have faced several challenges over the years. They believe they lack sufficient time to effectively meet to discuss students of concern. Most of the meetings have occurred before or after school hours and during teacher's prep times. They also are concerned about the lack of parental involvement in the teams' efforts. An additional challenge the teachers noted involves the particular population of students within their districts. There is a high percentage of students who are transient (approximately 30%), thus continuity of school assistance for students is affected. The school personnel also believed that the districts lacked appropriate financial resources to provided the needed programs and personnel.

Suggestions: (Question 6). The prereferral teams offered the following advise for other prereferral teams:

1. Select a team model and operational style that matches the needs of your school.

2. Once your school has selected a model, receive adequate in-service to support your operations. It is important that teams receive ongoing in-service to support their operations. The ongoing in-service support will allow for team growth and the ability to mold the prereferral program to match the school's needs.

3. When initiating the development of a prereferral team within a school, the members who comprise the team should be ones who are very committed to helping students and in accomplishing the function of prereferral.

4. As new members are added to the team and replace previous members, they should receive adequate training and support regarding the team's norms, operational style, and individual roles and responsibilities.

5. Since team conflict is a common characteristic of teams, a training and set of follow through procedures for conflict resolution should be identified.

6. All team members should have clearly defined and delinated roles and responsibilities so that the majority of work does not fall on 1 or 2 members.

Discussion: The information collected from prereferral team members revealed several significant factors that supported the maintenance of the teams. A strength possessed by each of the 8 teams that have continued to remain in tact after their initial formation was they had received formal team training and follow-up support to assist them with their prereferral operations. Previous studies (Hammond, Ingalls, Olson, Edson, & Greenfieldi 1994,, Ingalls & Hammond, 1996) describe the details of the teams' training. Through a systematic format of training, teams were able to individualize their operations to match their schools' needs. Each of the teams were instrumental in forming a team vision which dictated the purpose and function for their team's operations. Additionally, members clearly learned the importance of establishing team norms and membership roles and responsibilities.

An additional strength held by the 8 teams was their ability to appreciate the skills and contributions of the various team members. Since the teams were multidisciplinary the representation was varied and provided an assortment of personnel knowledge to effectively problem solve and address teacher concerns. Additionally, the use of a transdisciplinary operational style allowed members to feel professional satisfaction in their involvement on the team.

A third characteristic common to the 8 teams was they developed a system to alleviate the "burn-out" problem where staff become overwhelmed with meetings and school obligations. Using the rotation system for the general educators, staff were expected to serve on the teams for a reasonable time period and then were released from the team duties. This allowed members to maintain their enthusiasm for team operations.

The tracking system the teams used was extremely effective in assuring team efforts were recognized, utilized, and implemented across time and settings. This strategy additionally assisted members with feeling the importance of their roles and helped to decrease possible "burn-out" problems.

In analyzing the 2 high school teams which have discontintied or are struggling with teams operations, it is important to note these teams did not receive the team training the other teams received. One of these teams elected to not participate in the training, since they preferred to develop their team on their own. The second team joined the team training 2 years following the initiation of the districts' training project. These 2 factors are suspected to be major reasons that affected the success of their teams' maintenance.

In conclusion, the results of this study strongly support the provision of formal team training and ongoing support for newly developing prereferral teams. The tri-school district's administration provided team members with a focus to implement the prereferral process and furnished the necessary support over a period of several years to assure the teams not only maintained their operations but operated in an effective manner to assist teachers, students, and families. This study's findings have clear implications for rural schools who are attempting to meet the needs of a diverse student population with limited resources. The results of this investigation clearly underscores the importance of team training, administrative support, and staff commitment for the prereferral process.

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THE ROLES OF PARAEDUCATORS IN A RURAL-REMOTE STATE: VIEWS OF ADMINISTRATORS, TEACHERS, AND PARAS

To paraphrase Charles Dickens, paraprofessional status in 1999 represents the best of jobs and the worst of jobs. The influx of students with disabilities into general education classes has led to the situation where ever more direct services are delivered by paras--and these services are delivered to ever-more needy students. This may be particularly true in rural and remote sites where many licensed teachers remain itinerant (Murphy, 1994).

Very little is objectively known about the lot of special education paraprofessionals (Blalock, 1991; Milner, 1998). Those with concerns about the nature of services delivered to students with disabilities legitimately pose the following questions:

1. What is the nature of the roles of paraprofessionals?
2. How much (and what type of) education do paraeducators bring to their positions?
3. How much training is received by paras and how do they perceive the effectiveness of these efforts?

The research questions listed above guided the development of a study designed to investigated the roles of paraeducators in a rural remote state.

Method

The state education agency in a Northern-tier, rural state funded a study of paraeducators' roles and training. Building principals (N = 153, 53% response rate), special educators (N = 554, 57% return rate), general educators (N = 297), and special education paraeducators (N = 572, 57% response rate) served as respondents. Survey methods were employed, followed by calculation of descriptive statistics and, in some cases, inferential tests. Written responses were examined for emergent themes.

Two surveys were developed; a form was designed targeting principals, general education teachers, and special educators. A second form was developed for paraeducators. Items addressed perceptions of paras' roles, the nature of students with whom they experienced contact, settings for services, the nature of supervision, the availability of job descriptions, and training issues.

A letter addressed to each principal in the state included an administrator form and 10 copies of the general educator instrument; the administrator packet also included the quantity of surveys commensurate with the most recently-reported number of special education paraprofessionals in the building. Principals were requested to complete the administrator survey, distribute the general educator and paraeducator versions, collect completed surveys and place them in a postage-prepaid mailer. Surveys were returned to a university research bureau where they were tabulated and analyzed.

Licensed special educators were surveyed via a direct mailer which included return postage. Lists of licensed special education teachers were obtained from the state education agency. All instruments were returned to a university research bureau where they were encoded and analyzed via SPSS for the Macintosh (SPSS, 1994).

Results and Discussion

The Role(s) of Paraeducators

A considerable degree of concordance regarding paras' roles was noted. For example, general education teachers, special education teachers, building administrators, and paras, themselves, portrayed paraeducators as serving primarily four groups. These were, in order, students with learning disabilities, speech-language disabilities, mental retardation, and emotional disturbances.

Paras were more likely than were members of other groups to report themselves as working with students evidencing speech and language disorders. This probably means that some paras were confusing the categorical designation with deficited language behaviors evidenced by students.

Paras served in a variety of settings, led by general education classes (79.4%) and resource rooms (64.7%; the totals sum to over 100%, because respondents had observed paraprofessionals working in more than one setting per para). On average, paras were observed in a mean of nearly two settings each (M = 1.85, sd = 0.90). It is probably not possible, in other words, to focus training efforts on one disability--or even a few disabilities or settings.

Settings where special education paraeducators were seen as working are shown in Table 1. The significant chi squares indicate that paras' service "arenas" are perceived differently by members of the different respondent categories.

Table 1. Settings served by paras as a function of respondent group.

Respondent Category	Reg Class	Resrc Rm	Slf Cntnd	Comm-Based
Sp. Ed. Teachers	402 (72.6)	396 (71.5)	181 (32.7)	78 (14.1)
Administrators	138 (90.2)	133 (86.9)	63 (41.2)	32 (20.9)
General Ed. Tchrs.	256 (86.8)	119 (50.5)	39 (13.3)	79 (26.6)
Total	796 (79.4)	648 (64.7)	283 (28.3)	13 (4.4)
X^2	36.6	119.8	50.5	29.1
p	<.0001	<.0001	<.0001	<.0001

Three aspects of paras' roles specifically addressed in the survey were **job descriptions**, **planning**, and **supervision**. It could be argued that effective deployment of paraprofessionals depends first upon the existence of a useful job description (upon which supervision and evaluation would presumably be based). Only 38% of paras reported possessing a written job description. Obviously, the great majority either knew they did not have one (26%) or did not know (37%).

Special education paraeducators were asked who wrote plans which guided their daily practice. Ten percent of paras either wrote their own daily plans (5%) or reported that they operated "without direction" (5%). Special education teachers were identified most often as the individuals planning for paraeducators.

It is estimated that 17% of paras receive clearly inadequate supervision. This figure is made up of 12% who responded "don't know" [to the supervision item] and 5% who "lacked supervision." Most paras (65%) indicated that special education teachers were providing feedback and guidance. This suggests that special education teacher trainees should receive specific training in planning for and supervising paraprofessionals. The quality of supervision and planning is unknown, though data from other studies suggest that it is often inadequate (e.g., Milner, 1998).

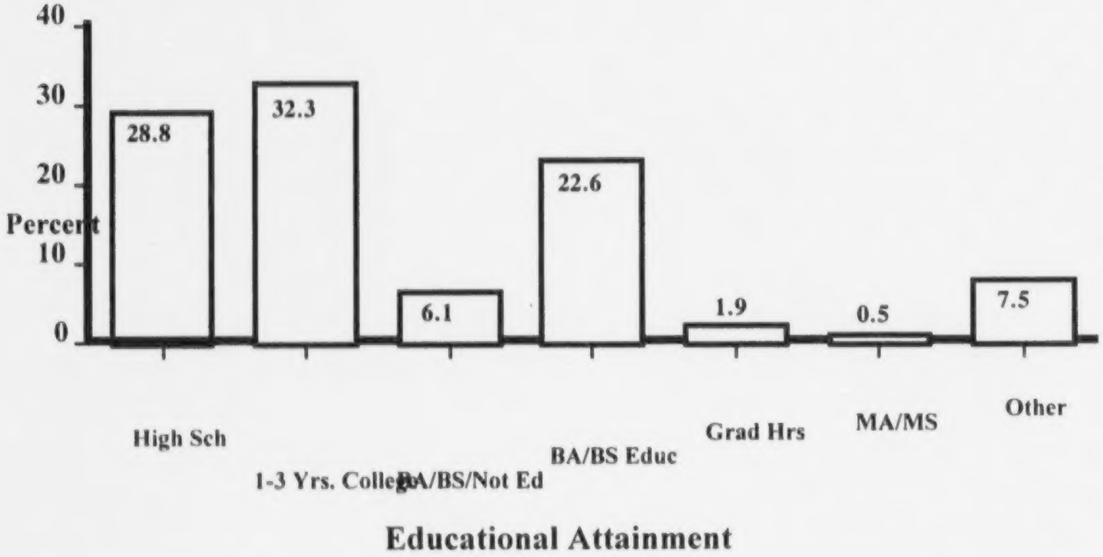
A lack of concordance between planning and supervision may be indicated. Fully 85% of paras report that special educators were primarily responsible for planning paras' days and weeks. On the other hand, evaluation and supervision was provided by special education teachers in only 65% of cases. It is difficult to imagine how special education directors or principals (the other groups supervising paraeducators) can provide adequate supervision or evaluation if no written job description exists or the special educator is responsible for planning.

Educational Background

As a group, paraeducators were quite experienced and evidenced considerable educational background. The mean years of employment at the time of the survey was 5.30 years (sd = 5.01); experience ranged from 0 to 30 years.

The mean number of students served by paras was 12.77. Twelve percent of the paraeducators served 1 student (or less; a few were performing clerical duties), while 22.2% served 2-5 students. The single most common category was 11 or more students, suggesting that paras are serving in resource and general education settings and seeing a number of students. This, in turn, suggests that training in scheduling and time management may be in order for special education paraeducators.

Figure 1. Paraprofessionals' self-reported educational attainment



Paraeducators' self-reported status regarding earned degrees is shown in Figure 1. Probably because universities in the state in question produce roughly twice as many elementary teachers as can be employed, a critical mass of well educated paras exists--even in rural parts of the state. Over a fifth of paras held degrees in education (22.6%). Nearly one in three (31.1%) had earned four-year degrees or higher.

The fact that many paras held degrees and that some degree of role confusion between paras and special educators is observed (Milner, 1998) produced some singular open-ended responses. Generally these fell into two categories. First, many teachers, administrators, and paras either thought that a degree was required or that a career ladder ought to be in place which reflected educational attainment. Second, worry was evidenced that paras were performing duties traditionally reserved for special educators and for which paras, it was felt, were not prepared:

- I think that the regular classroom teachers often expect more from paraeducators than what they should.

- ...they [paras] are doing many of the activities that the special education teachers used to do with students. My concern is for students, as to whether they are receiving the quality services that at one time were provided by the special education teacher.

- My concern is that we are hiring more aides to work directly with the students, who [the aides], in most cases, do not have the training needed to teach students appropriately.

- We use [the designation] "teacher aide" for employees without teacher credentials. We use the paraprofessional tag on those with certificates.

- We need to remember that the aides are paid a specific amount...Education has no bearing to what they get paid.

The majority of statements about the roles of paraprofessionals were positive comments regarding their importance in developing inclusionary programming. These comments outnumbered the "role confusion" statements about two to one.

Training

Between one-fifth and one-fourth of paras were in their first year of employment (22.7%). This "snapshot" of first year paras suggests that approximately this proportion represents yearly turnover. Because a significant relationship between hours of training and paraprofessional status was observed (X^2, 12, = 72.5, $p < .0001$), providing appropriate training to paraprofessionals appears a daunting task indeed. For example, fully half (50.7%) of new hires had not received any hours of training. Persons responsible for professional development in rural states will need to plan yearly on training a new cadre of **at least** 20% of the total number of paras from the previous year.

Training modules developed at a local university affiliated program were being delivered to paras across the state. Paras were offered the opportunity, via open-ended responses, to rate the quality, timeliness, and convenience of sessions.

Responses to training opportunities were generally favorable. About half of the written responses were seen as exclusively favorable (48.9% of all tabulated comments). Thirty-five percent of comments contained both positive and negative feedback (negative feedback coded if specific changes in content or procedures were offered), while 13% of written comments were exclusively negative. About 3.1% of those responding provided comments which were uncodeable; these tended either to be statements about the job or neutral descriptions of training content.

Negative comments and suggestions for improvement or change were coded into four categories as shown in Figure 2 below.

Figure 2. Categories of responses to open-ended questions.

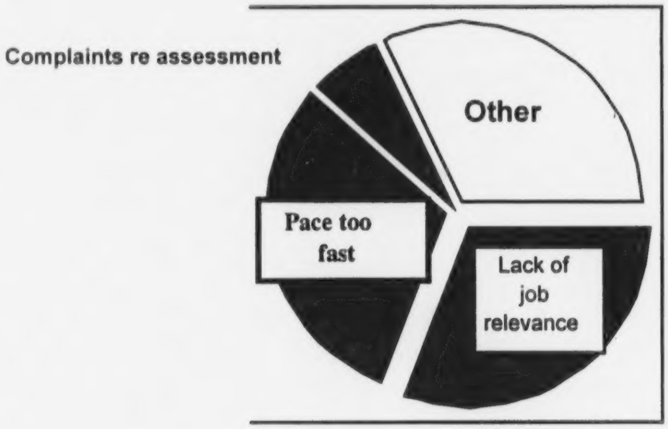


Figure 2 is based on 159 codeable responses, rather than on the number of respondents, because individuals offered varying numbers of statements. Approximately 1/3 of the responses indicated that the training on offer did not match the requirements of the position:

- I felt they [modules] were nothing at all pertaining to my work and were very outdated.
- Some aspects of the modules didn't apply to my job.

Many respondents argued that local districts and cooperative units could put together training sequences based on the specific needs of paras as they interacted with students.

About a third of negative responses proposed that the pace of instruction was too fast. Six percent argued that assessment practices were either (1) inadequate, or (2) not sufficiently tied to the material being taught. The "other" category included a variety of complaints and suggestions, for example, statements regarding the quality of presenters or materials, and disputation about logistics.

Summary

1. Paraeducators serve primarily students with mild disabilities. Paras reported themselves providing services to students with speech and language disabilities significantly more often than did other respondents. This might reflect confusion between language dysfunctions (evidenced by students served under other categories) and the categorical designation.

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2. A significant number of paras were observed providing services in self contained classrooms (28.3%). A majority of services, on the other hand, were perceived as being offered in general education environments.

3. Some problems of role were noted. These include role confusion with special education teachers and a lack of written job descriptions. A small, but significant, minority received little or no supervision or assistance with daily or weekly planning.

4. Paras served a mean of 12.8 students. This figure is probably inflated by paras who serve in general education classrooms and who supervised lunch and playground activities. Just over 10% of paras served one student.

5. About a fifth of paraeducators were in their first year of employment. This is probably a reasonable estimate of the percentage of paras in rural- remote states and regions who will require initial training each year.

6. Paras tended to be a well educated group. One in five had earned education degrees and 1 in 3 possessed four-year degrees or better. The mean number of hours of training for paraeducators in the study was 12.1%, but over half of first-year hires had received no training at the time of the study (spring term).

7. Paras tended to be satisfied with state-mandated training, with 84% (of those offering comments) writing at least one positive observation and half writing only positive commentary. The pace of training was frequently criticized (too fast), as were assessment practices and relevance.

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AN ANALYSIS OF INCLUSIVE EDUCATION IN EASTERN KENTUCKY

Two important currents are converging to bring about profound change in the schools of Kentucky. The first is the far-reaching reforms of the Kentucky Education Reform Act of 1990 (KERA) with its high expectation for **all students** and its revamping of literally every component of the education system. The second is the growing push for inclusion of students with disabilities in the typical life of our schools and communities. It is not surprising that many authors have taken the position that inclusion and school reform are both a piece of the same cloth: the effort to assure quality educational results for all students. The language of these two movements has the same vocabulary: collaboration, meaningful outcomes, valuing diversity, cooperative learning, and effective schools. KERA is completely consistent with the national move toward inclusive schools. With an emphasis on multi-age and multi-ability classroom, new standards for teachers, and high expectations for all students, the classroom envisioned in the KERA reform is an inclusive setting. While it is true that some educators have not drawn the connection between the KERA reforms and a new relationship between special education and general education, others have clearly understood these implications and have developed exemplary programs. In the most recent ARC report card on inclusive education, Kentucky has moved up to join that select group of states that at least rate a "C."

The State of Kentucky has made substantial progress in addressing issues of inclusive education. Yet there is a sense this progress is not equally distributed across the state. The "Golden Triangle" of Lexington, Louisville, and Covington (Cincinnati, OH), the economic heart of the Bluegrass, contains some exemplary school. However, this urban, suburban, and prosperous horse-raising region is not all of Kentucky. In contrast to the Bluegrass region, the 22 county region served by Morehead State University is the rural heart of Appalachia. There has been some change in Appalachia since it gained national attention in the 1960's. Yet, much has remained the same and some critics claim some aspects of life have gotten worse.

While statewide inclusion efforts have grown remarkably in the last few years, the reality of effective collaboration and inclusion in Eastern Kentucky is less than edifying. There are individual exceptions of teachers who have worked out great arrangements for an individual or small groups of students. However, the Director of the Systems Change project points out that Eastern Kentucky has been a frustration to them and they have had little sustained impact in the region.

The pressure for more inclusion or perhaps more appropriately, individual mainstreaming of students with moderate to severe disabilities is mounting from the State Department of Education, individual teachers, the small but growing network of parent advocates, and due process cases. However these individual solutions, like the negotiated teacher-made arrangements are not what defines an inclusive school. Many factors could be used to explain lack of movement toward inclusion in this region, including: the rural isolation of the region, the status of students with disabilities in the school and community, economic pressure on the schools, the massive demands for re-training presented by the KERA reforms, and lack of advocacy pressure.

Currently there are perceptions about the current status of inclusive education in Eastern Kentucky, but no clear data. Anecdotal reports and observation in classroom throughout Eastern Kentucky indicate wide variation in the degree to which inclusive education is being implemented. Individual teachers and administrators report discrete, episodic, and often isolated efforts toward inclusion. These same educators express frustration over the lack of information and technical assistance to support their efforts. In truth, no one has a firm handle on what is happening in this region nor the degree of information that teachers and school administrator in the region have related to the empirically validated "best practices" that support inclusive education.

The study reported here seeks to shed some light on this important area of educational practice by achieving the following objectives.

1. Develop a clear database on the degree to which inclusive education is experienced by students with various disabilities throughout the region.

2. Assess the extent to which educational practice that have been identified as characteristic of "quality inclusive schooling" are being implemented in the region.

3. Assess the discrepancy in knowledge and attitudes related to inclusive education among school administrator, regular educators, and special educators in the region.

4. Develop recommendations for a) revisions in pre-service training programs in regular and special education; b) in-service training and c) technical assistance needs in the region.

How the Study Was Conducted

A data collection form was developed based on a review of the literature on the characteristics of effective inclusive schools. The draft form was field tested with a group of educators from a local district and then revised. In its final form the survey had 154 questions in 8 sections: 1) demographics of study participants (11 questions), 2) regular education experience, perspective, and instructional strategies (25 questions), 3) special education experience, perspective, and instructional strategies (23 questions), 4) definitions of inclusion (10 questions), 5) desirability and presence of effective inclusionary strategies (33 strategies respondent ranked each on desirability and presence in their school), 6) benefits of inclusion (4 questions), 7) barriers to inclusion (11 questions), and 8) opinions about inclusion (3 questions).

All 3393 teachers in the 178 elementary and middle school in the 30 school districts in 22 counties of the Morehead State University service region had an opportunity to participate through forms mailed to their schools. The findings reported here and in the final report are based on the questionnaires returned by 651 teachers in 65 schools who elected to participate.

Findings

Daily practice in the schools of Eastern Kentucky continues to be based on a model of "mainstreaming"-- the individual involvement of students with disabilities in regular classes. **A movement to the formation of *inclusive schools*** with a coherent vision of effective education for all members of a diverse student body and a fundamental reordering of the relationship between regular education and special education **has barely begun**. However, the findings of this study suggest that there is a good foundation on which to undertake this challenge. Much of the literature on inclusive schooling suggests that while specific practice and skills are crucial to quality inclusive schooling, it is the ultimately development of a school-wide vision of inclusion that marks exemplary programs. In the findings of this study we see a consensus on group of beliefs that suggest that teachers are ready to engage in the hard work of developing a common vision of their schools as inclusive communities.

As any systematic literature review reveals the national discussion about inclusive education entails issues that are far more complex than the "simple" matter of where the instruction of students with disabilities takes place. Similarly this study of the inclusion movement in Eastern Kentucky raises some complex issues that are not given to simple analysis. Given the complexity of these issues, it is important that before we attempt to clarify the meaning of the data of this study that we state the perspective from which we conduct our analysis.

We take as a given that the term "inclusion" refers to a positive movement in American education. Inclusion like school reform is about creating an optimal learning environment that maximize the effective use of resources to assure the highest level of educational outcomes for each and every student. We do not subscribe to the belief that inclusion is about limiting opportunities for students nor that it a way of cutting back on services for students with disabilities. We believe that where inclusion has been really implemented we see schools that epitomize the well established research base on effective schools.

Inclusion requires the education system to confront the reality that systematic, data-based, individualized instruction in student-centered environment is not the concern of a special interest group called "special education." Special education has, over the last 20 years, demonstrated an ability to provide instruction that can achieve meaningful outcomes for all students including those who some have seen as being "ineducable." At the same time the awareness has grown stronger in among many special educators that learning must bee seen in context and to be fully effective the technology of systematic instruction must to be connected to the day-to-day realities of life in the complex diverse world. The skills that make up the tool box of special education are not about clinical intervention or treatments for disabilities. They are about designing a technology of effective instruction that has as one of its foundation principles the belief that the failure to learn is rooted not in the student but in the failure of educators to identify the strategy that works for this student. This approach to education--a commitment to the educability of all students--lies at the heart of every wave of educational reform.

Inclusive schools are organizations that have come to the realization that special education and regular education both have something to gain by breaking down the artificial barriers of the past. In these schools, teachers--all of the teacher--have learned that they are all about the same business--the education of a community of students. Finally, students in these schools have the experience of learning, working, and playing together in a setting that is a microcosm of the diverse world in which we live.

Having stated the value system from which we approach this study, we can progress to examine our study questions not by asking whether inclusion is a good idea but in an effort to determine how this important change in American education is being implemented in Eastern Kentucky. In this light, it is important to underscore that the impetus behind the KERA reforms was an effort to advance the quality of education in the rural district of Kentucky whose graduate were often perceived as being ill-prepared to compete in today's world. Our analysis of inclusive schooling is an effort to determine if reform from above is leading to restructuring at the grassroots level. At the most general level our fundamental research question could be framed as "are the schools of Eastern Kentucky developing new relationship and structures to assure education success for their students or are they doing more of the same?"

To what degree is inclusive education experienced by students throughout the region?

Many students with disabilities are spending a significant amount of time in mainstream classrooms. Unfortunately, the vast majority of them remain "special education students" not members of inclusive school communities. We see this in the extensive amount of time that students spend being pulled out and in the lack of a close collaborative working relationship between special education and regular educators.

The fact that teachers identify the problems of students as the greatest barrier to inclusion and their major complaint about special education indicates that all support for the philosophical definition of inclusion notwithstanding, student with disabilities are still regarded as somehow different. Their difficulties are still seem as rooted in them and not in the problem of designing an effective learning environment. In an inclusive school we would anticipate a perspective that does not localize all problems in the individual and acknowledges the diversity of all students needs.

The continued strong presence of this individual pathology model of disability continues to be a barrier to inclusion in our schools and communities. While this culturally ingrained belief is a problem, we feel our data reveal another underlying set of beliefs that can act as a countervailing force and provide a foundation for change. Generally speaking the high rating that teacher gave to values related to diversity, access, and participation suggest an opening for refocusing the "handicapist" perspective on people with disabilities. This change of perspective is one of the essential characteristics which the literature suggests differentiate an inclusive school.

At this point it should be noted that in an effort to determine if there were any difference in student experience based on level of disability we examined the data for differences between special education teacher who serve primarily students with severe disabilities and those serving students with milder disabilities. This analysis revealed no significant differences. In fact, teachers of students with severe disabilities indicated that on several variables related to relationship with regular education they were more involved in collaborative planning. Given the small number of such teachers and the fact that this was not a statistically significant difference, the most we can say is this is an intriguing piece of information that suggests a focus for further research.

To what extent are "quality inclusive schooling" practices being implemented?

Generally speaking, most teachers are very supportive of the ideas and practices underlying the development of an inclusive school community. Teachers do not believe that children with disabilities are best "out of sight and out of mind." However, it seems apparent that these same teachers have either not been provided with a coherent rationale nor an opportunity to think through the basis for some of the educational practices that are being implemented in their schools. In most cases these are practices that assure students with disabilities have physical access to various aspects of school life. Yet, few schools seem to have examined participation in art or music, eating in the cafeteria, membership in the school clubs, assignment to a homeroom not a special education class, or use of the same transportation as an essential aspect of the schools mission and as one aspect of effective pedagogue. For the most part it seems that teachers support "best practices" not because they understand the rationale and research base supporting them but because they seem to be the "right" thing to do.

It is encouraging to note the wide range of accommodations that are being used to support students with disabilities in regular classrooms. Given the limited nature of systematic collaboration between special education and regular education, an un-answered question is the degree to which these strategies were suggested by special education and the extent to which regular educators design their own accommodations. The range of instructional strategies observed in a typical classroom, also suggest the flexibility of many rooms to effectively accommodate diverse learning styles. However, the limited use of learning centers and the continued reliance on whole class instruction and individual seat work suggest the need for schools to assist teachers in re-structuring their daily routines. In this light it is important to acknowledge that flexible student-centered strategies do not mean the abandonment of structure and systematic instruction. The challenge is the ability to create an environment that allows for independent exploration while simultaneously providing direct instruction to student who require such approaches. At the school level this raises the need to examine issues of resource allocation that support the development of optimal learning environments for all students. Solving such structural problems are not the responsibility of a classroom teacher working in isolation. This is one area, among many presented by this study, that underscore how inclusive education is about school restructuring not "just" special education.

In this light, the finding that those practices which reflect a basic re-examination of working relationships within the classroom are not very common merits attention.. There seems to be very limited use of true collaborative teaming that involve special educators and regular educators in a mutually supportive working relationships. Contributing to this absence of "role release" among teachers is the problem of not knowing how to implement alternative approaches. There does not seem to be a significant amount of training being conducted to help teachers develop these collaborate skills. Related to this finding is the apparent ambiguity of administrative support which mandates certain practice but does not provide the training and scheduling needed to achieve fundamental change.

In summary, many discrete practices seem to be present in the schools responding to our survey. The pattern of ratings and the discrepancy in ratings lead us to the conclusion that for the most part these practice are implemented because "the state says we need to do this." Most schools have not done the necessary hard work of developing a coherent vision of inclusion that unifies these practices and moves to a second phases of reordering working relationship within the school.

Is there a discrepancy between regular educators and special educators?

The good new is that many of the structural barriers between special educators and regular educators are largely a thing of the pass. However, they still do not seem to spend much time really working together. They both seem to largely do their own thing. This is seen in the different response patterns across the two groups. There is a positive aspect to this divergence of perspective. We see that regular educators have a higher opinion of special educators and a more positive picture of the role of special education than special educators believe. This suggests that there is a foundation on which to build a new working relationship between these teachers.

It is also positive to note that the more they work together the more teachers from these two groups seem to acknowledge the value of their changed relationship. As they work together, they also appear to grow in their endorsement of inclusion and strategies that support it. It is not accidental that these movements seem to be related to schools where training and other efforts related to the systematic movement toward inclusion are more likely to occur.

Generally speaking special educators are somewhat stronger than their colleagues in endorsing the value of the best practices outlined in this study. This is not surprising since in their preservice preparation special educators had an opportunity to explore some of the strategy which might be a novel idea to regular educators. While special educators are somewhat stronger in their endorsement of inclusion, certain attitudes expressed by these teachers are potential barriers to effective inclusion. Specifically, special educators are more likely to see "their" students in terms of differences rather than as "students first." When this is linked with their self identification as clinicians whose role is to serve "identified" students they may have a difficult time transitioning to a role as an instructional design specialist on an inclusive instructional team.

Conclusions and Recommendations

The principle focus of this study is an effort to nurture the development of inclusive school communities that are committed to quality education for all students. The findings of this study suggests the need for individuals and organizations who share this vision for school reform in Eastern Kentucky to work for implementation of the following recommendations.

1. Universities, engaged in preservice teacher education, need to breakdown the barriers between special education and regular education. Within the framework of Kentucky's recently revised regulations on teacher certification the opportunity exists to effectively integrate special education strategies into the preparation of all teachers.

2. The development of collaborative skills must become a high priority in the education of all teachers in training. The self-image of teachers needs to move from being an individual practitioner to being a member of an instructional team.

3. To become an inclusive community schools have to provide an opportunity for staff to work through their preconceptions and prejudices and develop a common vision of inclusion.

4. Every school should have a restructuring task force that provides an opportunity for all stakeholders to buy into the vision and contribute to the local design of reform and inclusion. School reform requires a personal commitment from every teachers. When it is implemented based exclusive as a mandate from above it will not be effectively implemented. The data suggests that both KERA and inclusion may be at risk of suffering this fate.

5. Practitioners currently working in the schools of Eastern Kentucky must be provided with the resources of training and time needed to develop effective collaborative working relationships.

6. Just as students with disabilities should be assigned to general education homerooms, special education teachers should be assigned as full members of instructional teams.

7. Administrators must systematically and proactively provide concrete support for efforts at restructuring for inclusion.

8. The State Department of Education, regional special education cooperatives, local districts, and universities should collaborate to design regional support teams to assist individual schools in working through the process of restructuring.

9. Since many teachers lack formal training related to special education and the characteristics of students with disabilities there is a need for professional development activities that allow all teachers to examine basic topics in education of students with disabilities.

10. The congruence of the inclusive school movement with the KERA reforms is too often left implicit. The State Education Department should provide explicit guidance which connects the building of inclusive school communities with effective schools. This discussion should not be the exclusive province of the Division of Exceptional Student Services. It must be generally acknowledged that the issue of diversity in education *is* the issue of inclusion.

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PREASSESSMENT TEAM PRACTICES IN RURAL SETTINGS: AN ANALYSIS OF TEAM ACTIVITIES

General and special education practitioners have been challenged to support increasing numbers of children with disabilities in general classrooms (Reynolds, Wang, & Walberg, 1987; Will, 1986). This need for including students emerged in response to concerns about segregating children with disabilities from their nondisabled peers, questions regarding the efficacy of special education, and concerns about the increasing expense of serving growing percentages of students with mild handicaps in special education programs. Experts have recommended that educators examine the effectiveness of available provisions to accommodate children who are failing in the regular classroom (Kauffman, Gerber, & Semmel, 1988; Nevin & Thousand, 1986). In response to this continuing problem, over the past two decades, schools have instituted a variety of programs and procedures. Direct service programs that offer school-based support include Title I reading and math programs, tutoring programs, mentor programs, and teacher-generated assignments modifications.

Nearly all schools have also implemented programs that offer support to the teacher through consulting teacher teams referred to variously as preassessment, prereferral, teacher assistance, or student assistance teams. The primary purpose of preassessment is to provide general educators with support and preliminary intervention to facilitate the success of students who are experiencing learning and/or behavior problems in the general education classroom, thereby reducing the numbers of students who require comprehensive evaluations to determine whether they need special education services (Bay, Bryan, & O'Connor, 1994; Carter & Sugai, 1989; Fuchs, Fuchs, Bahr, Reeder, Gilman, Fernstrom, & Roberts, 1990; Graden, Casey, & Bonstrom, 1985). The major benefit derived from preassessment interventions is maintenance of more students in the general classroom and less time spent on unnecessary evaluations (Harrington & Gibson, 1986). Because 681,500 professional hours and $9,715, (100 in professional salaries were spent annually in a single state for school comprehensive special education evaluations (Honeycutt, 1988), the practical result of effective preassessment procedures would be considerable. Moreso, effective preassessment activities would reduce the negative school experience of those children who are not successful in the general curriculum.

Preassessment is a relatively common practice in the field of education. Most states currently require preassessment procedures but, to date, there is limited empirical evidence to indicate that preassessment is effective (Carter & Sugai, 1989; Myles, Simpson, & Ormsbee, 1996; Ormsbee, Myles, & Simpson, in press). Preassessment teams have many functions including clarifying student problems, developing behavioral interventions, identifying instructional and management goals, and recommending curriculum modifications. (Adelman, 1996; Graden, Casey, & Bonstrom, 1985; Ormsbee, Myles, & Simpson, in press). More specifically, these collaborative teams offer general educators assistance in accessing school services and provide a system for collegial problem-solving (Pugach & Johnson, 1995).

In an early study predating most state mandates, Chalfant, Pysh, and Moutrie (1979) found that preassessment teams reduced special education referrals by 63.5% in an Illinois school district. Graden, Casey, and Bonstrom (1985) investigated preassessment practices in six schools located in a large suburban school district. In four schools, special education placements were reduced dramatically (60% - 77%) following the implementation of a preassessment program. In two schools, preassessment resulted in no reduction of special education placements.

Several studies have looked at preassessment procedures and effectiveness through the perceptions of general and special educators. In several surveys of teachers' perceptions of the effectiveness of preassessment, overall educators have indicated they were satisfied with preassessment teams and that the teams offered appropriate interventions (Harrington & Gibson, 1986; Myles, Simpson, & Ormsbee, 1996). However, teacher reaction was mixed as to whether the preassessment team assisted in alleviating problems.

Cooley, McVey, and Barrett-Jones (1988) reported wide variability in the way preassessment was implemented in nine midwestern school districts. These researchers reviewed referral information for students with learning, behavior and/or speech/language problems in the regular classroom, the degree to which preassessment strategies were implemented, and how they were documented. Using descriptive data, the report identified effective preassessment practices as including (a) accurate description of students' problems, (b) interventions directly related to presenting problems, and (c) observational data on intervention outcomes. Based on data collected the study made a number of recommendations, including:

1. Preassessment teams, especially referring teachers, need to be trained to diagnose the student's problem more accurately and specifically.

2. Preassessment teams, especially classroom teachers, need to b e better trained regarding effective interventions within the classroom...

3. Preassessment teams need to b e trained to evaluate the effect that interventions have on student performance (p. 205).

Thus, the purpose of this study was to determine if preassessment practices have improved in districts. District preassessment records of students referred for a comprehensive, special education evaluation were reviewed to collect data regarding reasons for referral to the team, the types of intervention designed, and evaluation procedures for determining intervention effectiveness.

The purpose of this study was to describe the preassessment team activities and strategies for meeting the needs of students with learning and behavioral problems in general classrooms. Preassessment records for students referred to building teams were reviewed to identify the reasons students were referred, information collected by teams and used for intervention design, interventions developed in response to referral problems, and monitoring activities.

METHOD

District information

A small, rural school district participated in this study. This district was located in a midwestern state that mandated preassessment practices in the mid 1980's in an effort to control special education referrals and maintain more students in the general classroom. Student population is approximately 7,300 students, with 18 sites (10 elementary, 6 middle/junior high schools, and 2 high schools). Extreme ethnic diversity is a major factor in this district. In particular, this district's ethnic breakdown is Caucasian (49%), Hispanic (44%), Asian/Pacific Islander (5%), African American (.05%), American Indian/Alaska

Native (.05%). Another element of diversity is the relatively high rate of poverty in the district as reflected in a 40% free/reduced lunch rate. Nearly 14% of students in the district are provided special education services. The ethnic breakdown for those students is comparable to overall district profile: Caucasian (47%), Hispanic (49%), Asian (2%), and African American (2%).

Participants

The subject pool consisted of 48 educators who were assigned or volunteered to serve on their building's preassessment team for the 1997-98 school year. The pool was comprised of a diverse group of educators that included elementary school teachers, special educators, specialty subjects, school counselors, school psychologists, building principals and school nurses. Individuals were distributed across age, averaging 41 years old. There was a range in teaching assignments, the largest number of respondents were regular education teachers, 25 in all. There were 4 were school counselors and only 3 principals in the sample. Six of the teachers were in bilingual education, 3 were Title 1 Reading, and 2 Librarians were included. There were one each in the categories of administrator, school nurse, selfcontained special education teacher, and physical education instructor. One person in the sample declined to state their teaching assignment. Overall the team members had an average of 15 years of teaching experience and almost one-half reported being certified in more than one teaching area. The sample was 87% women, not unusual for a largely elementary school sample.

The primary team members, in order of most often represented; included classroom teachers (one-fourth had assignments in bilingual programs), school counselors, and school principals. A few teams reported having members who represented nursing, school psychology, library, and Title II programs. Most schools either used a volunteer method (65%) of staffing the preassessment team. Other schools used a rotation system (4%), were assigned to the team by the building principal (15%), or some other method (4%) for determining preassessment team membership; twelve percent did not report a specific method for filling preassessment team positions.

Parents and students were not consistently active in the preassessment process. Parent notification of preassessment activities occurred about 40% of the time, with parents actually invited to team meetings only 20% of the time. Students were involved in preassessment activities at even lower rates, with notification of meetings and invitation to attend occurring only17% of the time.

Instrumentation

A date collection form was developed to assist in recording information when reviewing student records. The form provided a place to assign each student a number to protect anonymity and space to record preassessment team and comprehensive, special education evaluation information. A data collection form was completed on each case and used later for analysis.

Procedures

Data collectors were provided with the actual preassessment forms completed by school-based preassessment teams for the 1996-97 school year. Those forms are filed with and housed in the special education office of the district separately from students' special education folders. Information obtained from the files was transferred to a data form to facilitate uniform collection of information.

Data collectors reviewed files over the course of six months in seven sessions to accommodate ongoing evaluations. To collect this data, preassessment reports were pulled and the student was assigned a number, thereafter, the number was used in considering collected information.

RESULTS

General Referral Information

Preassessment activities for the year 1997-98 resulted in 243 students brought before building teams for in class assistance. Of those students discussed by the team, more than one-half (58%) were referred for a comprehensive, special education evaluation, resulting in 85 (60%) students being found eligible for special education services. The median grade at the time of referral for students was 2nd grade. The majority of students were identified for speech/language services (65%), the next highest category was learning disabilities (23%), gifted/talented (8%), and behavior disorders (4%) made up the rest of the students.

Team functioning information was also gathered. Specifically, the number of meetings that were held per referral was collected. Preassessment reports indicated that in almost 60% of the cases the teams met two times concerning a student problem. In one-third of the cases, the teams met just once before either closing the case or referring for testing. In just 1% of the cases, the teams did not meet at all before completing a referral for special education assessment. In contrast, in 1% of the cases, the teams met three times to discuss a student's school performance. Finally, 7% of the preassessment reports did not contain information that noted the number of team meetings.

Information was collected regarding the length of time it took for a student to move through the system from the preassessment point to placement in a special education program. On average, students who eventually were referred to special education assessment were placed in special education programs after 90 days. This included the time spent on general class interventions. It is important to note that the state suggested duration of general class interventions is 6 to 8 weeks.

Reasons for Referral

Records were also reviewed to determine the reason students were brought before to the preassessment team's attention. Referral reasons were categorized in major domains of school functioning or subject area. Reasons for referral included: (a) articulation problems (31%), (b) language/literacy deficits (24%), (c) general poor academics (20%), (d) no reason (19%), (e) inappropriate behavior (3%), (f) math/counting deficits (2%), and (g) motor skill deficits (1%)

Suggested Interventions

Figure 1 is a listing of the most often suggested intervention s for helping students who were brought to the preassessment team. The lists are organized from the most frequently suggested intervention to the least frequently suggested intervention. In general, records did not include individual child data to reflect the efficacy of interventions, the duration of the intervention implementation, or the evaluation procedures used to measure student progress.

DISCUSSION

Preassessment teams serve two clear functions: to support students who are experiencing learning and/or behavioral difficulties and to monitor the referral of students for special education evaluations. The preassessment teams represented in this study appeared to be addressing both of those charges; however, with limited success. While the preassessment records showed regular team meetings, documentation of suggested classroom interventions, and a regulated system of referrals for special education assessment; there were some qualitative concerns with regard to the preassessment team membership and involvement of key stakeholders, duration of attention given to students at the preassessment level, the proficiency of the team to pinpoint student problems, and the efficacy of team-suggested interventions.

One issue operating in the role of preassessment teams studied here is that special education faculty and staff were not members of the preassessment team. Additionally, the parents of students identified for concern and the students themselves were rarely involved in the process of participating in selection or implementation of intervention strategies. It seems input from key informants (special education teachers, parents and identified students) would enhance the efficacy of team activities.

Review of preassessment records revealed that teams and teachers seemed to expend limited energy on intervention activities before considering special education options. Of great interest was the time that was dedicated to implementing interventions in the general classroom before considering special education options. In the majority of cases, the records indicated two or fewer meetings to develop interventions and monitor implementation per student. These meetings often occurred within a two-week time frame, resulting in less than 10 school days being committed to an intervention. Given that many learning and behavioral problems are persistent and often intense, it would seem logical that a two week intervention plan is destined to fail, simply because it wasn't given adequate time. Moreover, most experts in the educational field recognize that behavioral changes occur slowly and often subtly.

There was no record of preassessment teams redefining the student's problems in behavioral terms or to refine teacher's referral comments to make the presenting problem one that was precise enough to match an empirically-supported intervention. That is, records review found that the teacher's report of the student's problem was often used as the sole focus by the team and often contained very general, subjective statements of the student's difficulties. No baseline of student functioning could be established and indeed no data on individual student performance was noted in the records reviewed. Moreover, these statements were, by and large, not specific enough to support any credible matching of a treatment. It is unclear whether these teachers were unaware that this was an important step in the preassessment process or simply lacked the training to do this.

A related concern regarding the preassessment teams' response to student problems was the suggested interventions. As shown in Figure 1, all of the interventions documented in the preassessment records were poorly defined, and of limited power to address any of the referral problems presented. Because documentation of the intervention effectiveness was absent in all of the records, it is unclear how students responded to these interventions. But from a researcher's point of view, it would seem that the interventions suggested by the preassessment teams were superficial at best.

However, it is clear to note that despite our misgivings regarding the possible efficacy of those interventions, the building teams did seem to meet the second charge of preassessment; to monitor the referral of students for special education evaluations. Referrals for special education evaluations were held to 58% with only about 35% of the original group of preassessed students actually being placed in special education. This rate of testing and identification is comparable to previous study in the state that this district is located that reported a 60% special education referral rate. Unfortunately, there is little known about those students who did not qualify for special education. That is, we don't know if the interventions suggested by the preassessment team were continued, if the teacher came back to the team for additional support, or if the teacher simply went back to his/her classroom and was able to successfully meet the student's needs independently.

Interpretation of these results are dependent on the stated purpose of preassessment teams. They are not intended to be a fast track to special education, though Chalfant & Van Dusen Pysh (1981) found that team members rated their efficiency as a referral vehicle as a positive for some. The same research indicated that the team functioned as a barrier to special education placement. This suggests an ambiguity of purpose that can only be clarified through further research.

Despite the existence of state mandates for general education attention before special education options are considered, interest in preassessment continues to be limited. Very few studies have been published in the area of preassessment, its efficacy and effective models for this process. In light of the continued emphasis on inclusive classrooms for students with learning and behavioral difficulties it would seem logical that preassessment should be viewed as a critical support mechanism for teachers. Particularly in rural schools where funds for student services are often limited.

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Figure 1 Suggested Preassessment Team Interventions

Speech/Language
- provide model of sounds/words
- instruct on tongue placement
- provide 1-step directions
- label class items
- encourage slower speech
- provide peer tutoring
- have student retell a story

Math
- provide 1:1 instruction
- drill math facts

Reading
- provide peer tutors
- use computer programs
- provide paraprofessional tutoring
- use taped stories
- reduce vocabulary requirements
- pretest on ending sounds
- drill daily on phonics
- practice reading orally
- use picture cues
- teach Dolch sightwords
- allow peer reading
- listen to tape of sounds
- use clay to form letters
- repeat oral/written directions
- write vowel patterns across paper
- use Rebus stories
- use study guides

Written Language
- practice writing letters
- use narrow lined paper
- use different chalk colors on board
- model notetaking system

Motor
- provide pencil grip
- use paper with distinct lines
- teach fingertip exercises

General Achievement
- provide after school tutoring
- provide peer tutoring
- use index cards for studying
- provide oral tests
- provide copies of notes
- contact parents
- allow students to retake tests
- have student repeat directions
- use cooperative learning
- practice fine motor skills
- use touch control
- prepare weekly progress reports
- modify curriculum
- provide extra practice homework
- monitor work completion
- touch student before giving directions
- have paraprofessional use close proximity

EARLY CHILDHOOD SPECIAL EDUCATION

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ASSISTIVE TECHNOLOGY IN OKLAHOMA PUBLIC SCHOOLS: A SERVICE DELIVERY MODEL FOR RURAL SCHOOLS

Introduction

In 1990 the definitions of assistive technology device and assistive technology service appeared in the Individuals with Disabilities Education Act (IDEA). Since that time public schools have been required to address the assistive technology needs of special education students and to provide assistive technology device(s) and/or service(s) when it is determined by the Individualized Education Program (IEP) team to be a necessary component of a child's free and appropriate public education. For many students with disabilities, the typical activities of school --asking the teacher a question, participating in a classroom discussion, reading a book, writing a story, playing at recess, or eating in the cafeteria--may be difficult or even impossible without the use of assistive technology.

The use of assistive technology may make it possible for a student who cannot speak to use an augmentative communication system to participate in classroom discussions, to ask and answer questions, or to participate in a pep rally with other students. Students who may not be able to hold a pen to write may be able to use an adapted pen, a computer, or a writing notebook to complete writing assignments. Other students may be able to play with their friends through the use of assistive technology. Although the promise of assistive technology is exciting, the reality is that public schools face many challenges related to meeting the assistive technology requirements of IDEA and continue to struggle in making the possibilities a reality.

The Challenges

There are many challenges associated with assistive technology service delivery and the public schools. Challenges such as limited guidance in meeting the law, the legal definitions, personnel skills and competencies, funding assistive technology, access to equipment, addressing assistive technology in the IEP, assistive technology assessment, and medical vs. educational need are just some of the issues facing public schools when addressing assistive technology (Bragg & Hartsell, 1997; Golden, 1997; and Reed, 1997).

Although IDEA 1990 and the 1997 amendments establish a legal mandate for schools to provide assistive technology device(s) and/or service(s), limited guidance for meeting these mandates has been provided from the federal level (Reed, 1997). In absence of clear guidelines, schools must rely on policy interpretation letters from the U. S. Office of Special Education, regulations and/or policy and procedures from state departments of special education, and local district interpretation. For many schools, the result is lack of clear procedures in how to address and provide assistive technology for students with disabilities. In many instances this causes schools to be in a reactive mode when addressing assistive technology as opposed to a proactive mode.

The definition of an assistive technology device is very broad. IDEA defines an assistive technology device as "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to maintain, or improve functional capabilities of children with disabilities." Given the scope of this definition, anything from a pencil grip to a computer to eye glasses could be considered an assistive technology device.

Many teachers and related service providers did not have assistive technology addressed as part of their preservice programs. As a result, these educators and related service professionals may not have an adequate knowledge base regarding assistive technology in order to make informed decisions regarding the use of AT with their students. Additionally, these educators or service providers may not have the necessary technical skills for supporting devices in the classroom environment or know how to integrate the use of the technology into instructional activities.

For many schools the funding of assistive technology devices and services is a major challenge. Although IDEA mandates that schools provide assistive technology when determined to be needed by an IEP team, there is not a separate funding stream or additional funding provided to schools for doing this. In some instances, schools may use lack of funding as an excuse to not provide assistive technology. This is certainly not legal. The law is also clear that all services including assistive technology which are part of a free and appropriate public education are to be provided at no cost to the family. Although the law does hold the schools responsible for acquiring the needed assistive technology devices and services, the law does allow flexibility for schools to pursue other funding options which might be available. Such options might include pursuing Medicaid funding to purchase devices which are considered medical in nature, pursuing funding assistance through service clubs such as Shriners or Lions, or coordinating with other agencies such as vocational rehabilitation. According to Morris & Golinker (1991) there are over twenty federal funding streams that could pay for assistive technology devices and services. The challenge still remains to identify the potential funding sources and then to work through the justification and application process for securing the funding needed.

Service providers need to have access to equipment (hardware and software) in order to try with students as part of the assessment process, to preview prior to purchasing, to increase knowledge and skills, or to have available for a short term basis while equipment is being repaired or purchased. Larger, urban districts may have developed their own equipment loan libraries in order to meet their local need or may have access to loan libraries located within the community. However, for small schools who are rural or outlying, having ready access to equipment may be a challenge. Many small, rural schools will not have the financial resources to develop an equipment library.

Addressing assistive technology in the IEP is also a challenge. Limited guidance is given from the federal level as to how to do this. IDEA simply states that when an IEP team determines that an assistive technology device or service is needed it must be included in the IEP either as special education, related services, or supplementary aids and services. According to Bowser & Reed (1998), there is no "right" place to include assistive technology in the IEP. The critical challenge here is to make that it **is** included in the IEP. In some instances, schools may not include assistive technology in the IEP seeking to avoid the responsibility.

One of the assistive technology services identified by IDEA is that of an assistive technology evaluation. This service may need to be provided in order to determine what type of assistive technology device(s) and or service(s) may be needed in order for the child to benefit from the educational program. The challenge to schools is to be able to provide this service once it has been determined to be needed. The intent of IDEA is that this service will be provided in the customary environment of the child. For schools, the challenge and the implication is to have service providers trained at the local district level who can provide this service. If there are no local service providers who can do this; then, the school will need to contract with either an evaluation center or evaluators in order to provide this service.

The issue of medical vs. educational need is not new to the history of special education. Since the definition of assistive technology device is broad, a challenge schools now face is having to consider as assistive technology those devices which are considered personal use devices or individually prescribed devices such as eye glasses and hearing aids.

The Assistive Technology Program for Oklahoma Public Schools: A Statewide Model

In an effort to assist public schools in Oklahoma in meeting the challenges of assistive technology service delivery, The Assistive Technology Program for Oklahoma Public Schools was developed. This program is a collaborative effort between the Oklahoma State Department of Education/Special Education Services Division and the University of Oklahoma Health Sciences Center/Oklahoma Assistive Technology Center. The program is designed to serve as a resource in assisting all schools in Oklahoma. The program offers services such as information dissemination, training, technical assistance, access to resources, and development of a statewide network of assistive technology resource team members to assist public schools in addressing the assistive technology requirements of IDEA at the local district level. Since many of the public schools in Oklahoma are rural or outlying, it is critical that all schools develop the capacity for addressing and providing assistive technology at the local level.

Information Dissemination

The program serves as a source of information and help for school personnel and parents. Service providers need to know where to turn for help or information. Information describing the services available through this program is disseminated to all Oklahoma public schools on an annual basis. School personnel and parents can call a 1-800 number to get information about assistive technology or to ask questions regarding service delivery. This helps provide access to a professional resource who is knowledgeable about assistive technology and educational environments for service providers who are located in rural or outlying schools.

Training

A major component of this program is staff development. A variety of training opportunities are provided by this program including awareness sessions, an in-depth systematic training program for the development of local district assistive technology teams, advanced level training, focused training for model program development, and customized in-service based on local district request and need.

Awareness level sessions are one day sessions that provide general information about what assistive technology is, the benefits of assistive technology for students with disabilities, device demonstrations, or provide training on implementation strategies. These are introductory level trainings designed to increase awareness level knowledge. These sessions are provided regionally in order to make them more accessible to rural or outlying schools.

A systematic training program for the development of local district assistive technology teams is also provided through this program. This training involves administrative commitment to a team approach to assistive technology service delivery. Administrators must commit to identification of a multidisciplinary team who will serve as a resource to the district. Team members and the administrator participate in a series of six training sessions throughout the school year. The training addresses the following competencies:

- Assess students assistive technology needs in the following areas of assistive technology (positioning, mobility, access, augmentative communication, computer assisted instruction, activities of daily living, recreation/leisure/play, environmental control, vision technology, and assistive listening device);
- Develop initial assessment questions and design assessment strategies;
- Identify and implement assistive technology services needed based on assessment results;
- Develop functional goals for students with assistive technology needs;
- Reduce fear associated with assistive technology by:
  - (a) increasing level of comfort with assistive technology implementation; and,
  - (b) increasing level of comfort as an Assistive Technology Team member;
- Identify team strengths and limitations and request assistance from appropriate outside professions, when needed; and,
- Develop a contact list of outside resources.

At the conclusion of this training series, teams demonstrate competency by providing an assistive technology assessment, writing a report with recommendations for devices and services, and addressing the recommendations in the IEP.

Another aspect of the team training is the development of capacity for service delivery at the local district level. Teams use a self-analysis tool such as the School Profile of Assistive Technology Services (Bowser & Reed, 1998) or the Region IV ESC Assistive Technology Team Seminars Innovation Configuration Matrix (Carl, Mataya, Zabala, et al., 1994) to examine components of effective service delivery for assistive technology teams in relationship to their programs. Teams identify present levels of service delivery utilizing this tool and then work together to generate an action plan for change. The tools are great for helping teams generate a vision for service delivery and helping them organize an action plan.

Administrative support and commitment is critical to the success of a team approach and for effective service delivery. In order to have effective service delivery, schools need to have policies or guidelines in place which explain assistive technology and the process for addressing the assistive technology needs for students.

Technical Assistance

Technical assistance is also provided through this program. Technical assistance is delivered through on site consultations at the local level, phone consultations, or by providing written materials. Program staff are also available to work with local district teams to assist with assistive technology assessments.

Increase Access to Resources

Regional assistive technology equipment loan programs have been established at ten Regional Education Service Centers in the state. Each location has designated an assistive technology contact who can provide support for the equipment as well as provide information about assistive technology. This helps to make devices more readily accessible to public school personnel for trial with students or for preview purposes.

Development of a Statewide Network

As local district teams are established, they are linked into a statewide network of assistive technology resource providers in order to develop collegial support. According to Bowser & Reed (1998), the development of collegial support is a critical component in effective system change for schools. The teams have opportunities to meet with each other and discuss common issues and challenges they face, to share solutions which have been effective, and to brainstorm solution possibilities.

This program provides a needed resource to Oklahoma public schools in meeting the challenges of addressing the assistive technology requirements of IDEA.

Project IMPACT AT Preschool: A District Model for Assistive Technology

(Improving Mobility, Positioning and Communication through Assistive Technology)

Background

Students with severe disabilities are often the most challenging and expensive to educate, but with the proper use of technology and educational planning, they have the ability for lifelong success. The purpose of assistive technology is to provide compensations for a disability so the student can continue to learn and develop functional skills. Children with severe disabilities may require up to 2,000 trials of practice to learn a new skill and they may have the ability to learn only 4 or 5 skills in their lives. Therefore, it is important to work on meaningful tasks and provide compensations (Bidabe, 1990). Young children learn and are motivated through play and children with disabilities are at a serious disadvantage because they are unable to play. Even when toys are offered to children, without adaptations, they become frustrated. The long term results of play deprivation will negatively impact a child's motivation and interaction (Angelo, 1997). In addition, locomotion which develops during the first years of life is also a primary vehicle for learning, socialization, and growth of a sense of competence. Therefore, restricted mobility in early childhood has a diffuse and lasting impact on an individual (Butler, Okamato & McKay, 1983). Children as young as 17 months can be taught to use power mobility and through use of this technology, children with physical disabilities are better able to explore and learn (Neely & Neely, 1993). Finally, communication is critical at every stage of life. Some children with disabilities are unable to communicate and frustration and helplessness are a result. Time must be spent in repairing the communication breakdown or compensating for the disability in severe expressive language disorders (Angelo, 1997). Assistive Technology extends the play and learning repertoire of young children. Very early use of adaptive toys, switches, computers, communication systems and positioning/mobility is effective in preventing learned helplessness and learning deficits (Swinth, Anson & Dietz, 1993).

After collaboration with the multidisciplinary preschool teams at Lawton Public Schools, a need to improve assessment practices and programming options using assistive technology, for functional activities of students with severe developmental delay was expressed. All preschool teams were surveyed in autumn, 1996 to determine what resources, training and equipment were needed to meet the unique educational needs of their students. A significant need for training was expressed to ensure that equipment was utilized appropriately.

A survey of staff at the Oklahoma Assistive Technology Center (OATC), who were the main suppliers of assistive technology evaluation and equipment in the state, revealed that their lending library had a constant waiting list of 1-3 months when lending augmentative and alternative communication devices and computers. In addition, they had no power wheelchairs or seating devices to loan to school districts. Finally, they were located in Oklahoma City and it was difficult getting equipment to outlying regions of the state.

Funding issues also complicated the use of assistive technology at school. Third party payers (Medicaid and private insurance) required a student to demonstrate the ability to use a piece of equipment prior to providing funding. For example, Medicaid may require a videotape of the student using the device in different environments. Therefore, if school districts could assess students with different devices and show success in the classroom, the financial burden of school districts could be alleviated through collaboration with third party payers. Lawton Public Schools had no opportunity to do this and parents often looked to the school district as a sole provider of equipment funding.

Purpose/Program Design

The target population included 88 students with developmental delay, at 6 preschool sites. In addition, there were 135 students in regular preschool and kindergarten with developmental delay (speech only). Personnel using the assistive technology lending library were 8 teachers, 4 physical therapists, 1 occupational therapist, 6 speech therapists and regular educators of 3-5 year olds with developmental delay

The design of the Project IMPACT AT Preschool gave teachers and therapists training in the use of assistive technology and an opportunity to assess the function of preschool students in their classrooms with a variety of assistive technology devices, and to improve preschool programming by using innovative technology in conjunction with student IEPs. By having equipment available through a lending format, all teachers and therapists for students with developmental delay, throughout the district, had equal opportunity to assess and educate their students. Equipment ordered fell into the areas of communication, positioning/mobility, and computers/access devices. The training component of IMPACT AT Preschool was crucial to its success. The use of statewide and site based training promoted use of the lending library and assisted in establishing a group of professionals with assistive technology expertise in Lawton. In addition to training multidisciplinary preschool teams, all trainings were open to regular preschool, kindergarten teachers and parents. As young children with disabilities are educated in the least restrictive environment, all teachers will utilize knowledge of assistive technology in the classroom.

Outcomes of Project IMPACT AT Preschool

I: Implement the assistive technology lending library.

  A. The project team will purchase, inventory, and install equipment and training resources for the lending library by September 1, 1997.

II: Improve assessment and programming of preschool students with developmental delay.

  A. Multidisciplinary preschool teams will attend 80% of assistive technology training offered during the funded year.
  B. By the end of each assessment period, students will meet 2 out of 3 goals stated by their teacher, therapist or parents at the beginning of the loan period.
  C. During the funded year, teachers and therapists will provide feedback about the assessment period and benefits to their program, to the project coordinator, on each loan period.

Program Evaluation

Evaluation of Project IMPACT AT Preschool was conducted by checkout log review, training log review, and the following survey:

ASSESSMENT OF ASSISTIVE TECHNOLOGY EQUIPMENT LOAN

TEACHER/THERAPIST NAME:____________________________________
BUILDING SITE:________________________ PHONE:________________
DATE CHECKOUT:________________
DATE DUE:________________________ DATE IN:____________ EXTENSION?__________
Staff authorizing checkout:__________________________________

HOW MANY STUDENTS WILL USE THIS EQUIPMENT DURING THE TRIAL PERIOD?

LIST 3 OUTCOMES THAT THIS EQUIPMENT WILL HELP YOUR STUDENTS ACCOMPLISH: (EX. 1: Joe will make choices using the switch and new computer program. 2: Joe will use 3 keys on the keyboard. 3: Joe will drive his power wheelchair from class to the library. 4: Teacher will use the manual to learn computer program and implement it into her curriculum.)

1.
2.
3.

(COMPLETE UPON RETURN)
Which outcomes were met?

Were there other student achievements during the trial period?

Were there unexpected difficulties in using this equipment?

Did this equipment improve your current instructional program? How?

Training recommendations:

Comments:

Results

Project IMPACT at Preschool resulted in benefits to both service providers and students. The goal of implementing the library was met and the following were results: 1) 61 pieces of equipment were ordered with the $29,000.00, 2) 49 pieces of equipment were checked-out during the first year of operation, 3) 5 school sites were served 4) 26 teachers/ related service providers and 1 parent used the library and 5) the top 5 requested devices were the Big Mack, Comfy Keyboard, Toy Clown and Jellybean switch, and the Rifton gait trainer.

The second goal of improving assessment and programming for students with developmental delay was also met. In order to improve preschool services, teachers and related services providers attended staff development. Throughout the year, the following 4 trainings were offered: Assistive Technology Introduction (23 attendees), Positioning and Mobility (7 attendees), Splinting Intervention (4 attendees), Community Open House (35 attendees), Project IMPACT AT Preschool presentation at local Council for Exceptional Children Chapter (20 attendees).

Teachers and related service providers gave feedback on the above survey regarding benefits of the loan program to their current instruction. In addition, students met 2 out of the 3 goals as stated on the survey, by the service providers, at check out. Approximately 258 students had the opportunity to utilize different types of technology in the classroom.

The benefits to the students and the instructional program were listed as 1) improved communication (increased vocabulary, more student interaction, increased voice volume), 2) improved mobility/positioning for learning, 3) more students were able to access the computer, 4) children enjoyed activities and appeared more motivated to learn and move, 5) assisted in meeting IEP goals, 6) gave students independence, 7) teachers/therapists were better able to engage students with physical disabilities into classroom activities, and 8) teachers/therapists had the opportunity to learn current trends in assistive technology and implement it into the curriculum.

Barriers to implementing assistive technology into the curriculum were 1) lack of time for experimenting with the equipment, and 2) the need for ongoing "hands on training" for teachers/therapists.

Conclusion

Project IMPACT AT Preschool was a successful endeavor and continues operation today. The process of utilizing the state discretionary grant process assisted a local district in improving education for preschool students with disabilities. Implementing AT into the curriculum in an ongoing process and challenge that requires each state to implement innovative solutions to meet the unique needs of students with disabilities.

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A STRATEGY FOR SUCCESS: AN INCLUSIVE PROGRAM FOR PRESCHOOLERS WITH DISABILITIES

Inclusion has become a major focus for parents and a challenge for teachers and school administrators. Minimal planning time, little or no in-service and a focus on test scores are often seen as reasons for continuing to provide segregated classrooms for children with special needs.

Parents of children with disabilities want their children to be included, to be participating members of the general education classroom.. The courts have upheld parents requests for inclusive settings, especially for young children with disabilities and the research outcomes have produced inconclusive evidence to support segregated settings. Inclusive classrooms have demonstrated increases in socialization skills and appropriate language models have clearly demonstrated increases in language facility.

Inclusive schools and programs have flexible learning environments and teachers who work collaboratively to implement instructional strategies that benefit all children. This paper will review the current research on inclusive preschool programs and present a model for translating this research into practice.

Research on Inclusive Preschools

Inclusion has become the recommended practice by the fields of early childhood special education (Division for Early Childhood, 1993) and early childhood education (Wolery and Wilbers, 1994). Effective collaboration between regular and special education provides the framework for establishing the inclusive classroom (Tiegerman-Farber and Radziewicz 1998). Collaboration has been defined as sharing in the activities necessary to provide appropriate educational programs for students. For the success of special needs students, general and special education teachers must interact and work together (Smith, Polloway, Patton and Dowdy, 1995). It requires that team members commit to a self discovery process which promotes creative solutions for educating young children. Communicative competency skills that include a willingness to listen to and accept others ideas, an ability to express opinions and ideas without criticism of others, the integrating of others ideas with your own and finally, flexibility are interactive behaviors that foster effective collaboration (Tiegerman-Farber and Radziewicz 1998).

In a recent study by Mills, Cole, Jenkins, and Dale, (1998) three levels of inclusion were explored for their effectiveness. The results demonstrated that both higher and lower performing groups of preschool children benefited from some level of inclusion. Professionals from both early childhood and early childhood special education who work together in an environment of mutual respect can create a dynamic set of learning opportunities for special needs children (Minzenberg , Laughlin and Kaczmarek (1999).

Project BLEND (Brown, Horn, Heiser and Odom 1996) an inclusive model demonstration project, showed that special needs children in the inclusive program were as actively engaged in learning activities and spent more time interacting with peers than similar children placed in segregated settings. Project BLEND children made comparable progress developmentally, as their peers in segregated settings.

The research clearly shows that inclusive programs can provide educationally sound, developmentally appropriate instruction for young children with special needs. Collaboration between teachers, parents, school administrators and other support personnel and knowledge of instructional best practice are the keys to establishing effective integrated classrooms.

A Model for Inclusive Preschool Classes

This model for inclusive education for young children employs a team teaching strategy between an early childhood special education teacher and a general education early childhood teacher. While there are other formats for providing inclusive programs, the focus of this model is on team teaching using existing personnel and funds.

In order to implement a team teaching inclusive classroom, there are several key factors that must be addressed. The first five factors are specific to school personnel and include: an interest and desire on the part of teachers to work together, the support of the administration that allows the freedom to be innovative, a belief in the abilities of all children to learn, an acceptance of all children as equal members of the classroom, and a recognition on the part of teachers of their own unique strengths and weaknesses. The last four factors focus on curriculum and instruction and fiscal reality. They include: a knowledge of developmentally appropriate practices, a knowledge of multiple instructional strategies and how to modify them, expertise in behavior management strategies and finally, the acceptance of fiscal constraints.

School Personnel

First and foremost is an interest and desire between two teachers who are excited about working together. School district officials cannot impose team teaching or collaborative teaching on teachers who are resistant to the concept. However, once teachers have demonstrated an enthusiasm for trying a team teaching approach for working with young children, the planning process can begin.

The next challenge is to gain administrative support that will allow teachers the freedom to be innovative. The teachers must provide assurances to the administration that the curriculum demands of the district and state will be met. School districts are continually having to answer to the public about test scores so all teachers, even the early childhood professionals, are pressured to teach children to read and write at earlier and earlier ages. If two teachers are willing to undertake a team teaching project for meeting the needs of disabled and non-disabled preschoolers, they need to be prepared to address the accountability issues with their administration.

The belief in the ability of all children to learn is basic to the establishment of an inclusive classroom using the team teaching model. While it is assumed that the special education teacher recognizes the worth and abilities of all children, the general educator must also embrace this belief lest the division of students and teaching responsibilities become polarized.

Along with the belief that all students can learn and benefit from an inclusive environment, is the need for the acceptance of all special needs students who live in that attendance zone regardless of severity of disability, as members of the class. Teachers cannot pick and choose which students will participate in the class and when they will enter. Children turn three throughout the school year and families come and go, so the population in the classroom will change, especially the children with special needs. The teachers must accept and plan for this.

Teachers planning to team teach must recognize and acknowledge their own strengths and weaknesses. They must also openly acknowledge the strengths of their teaching colleague. Regular education and special education teachers approach early childhood instruction from different points of view. Therefore, if team teaching is to be successful, the teachers must spend some time evaluating their perceptions and beliefs about children, learning procedures, educational expectations as well as their personal-professional performance (Hines, 1994). With this understanding of themselves and each other, and a commitment to honest and open communication, teachers are ready to begin laying out the long range plan, the short term objectives and the instructional and behavior management strategies appropriate for an inclusive classroom.

Curriculum and Instruction

Early childhood teachers are well grounded in developmentally appropriate practices for teaching young children. Early childhood special education teachers are knowledgeable in adapting instruction and materials to meet the needs of young children with special needs. Combining these teachers' expertise in one classroom provides the assurance that the curriculum and the systematic instructional strategies will be designed to meet the needs of all of the children. In a developmentally appropriate curriculum, teaching is viewed as a continuum from non-directive to directive (Bredekamp and Rosegrant, 1992). This perspective is a shared view by special education and regular education teachers with each having an emphasis on different points in that continuum. Appropriateness of curriculum and instruction encompasses a range of teaching methods designed to meet individual needs (Smith, Miller and Bredekamp, 1998). Special Education Teachers bring expertise in matching appropriate instructional strategies with the learning needs of the individual children in an inclusive classroom. Regular Education Early Childhood Teachers have expertise in child centered learning in well structured learning environments that promote discovery learning. The combination of the two strengths can provide a dynamite program where all children become competent learners.

Effective behavior management strategies are an important component of any classroom and especially in an inclusive classroom that may include children with significant social and emotional developmental delays. Special education teachers bring expertise in methods for structuring the classroom, incorporating clear expectations for child behavior and designing behavior management strategies. This knowledge coupled with the curriculum knowledge of the early childhood teacher provides a coordinated effort for structuring a comprehensive inclusive program.

The final factor that all personnel must accept is the fiscal constraint that exists. Because two teachers embrace a team teaching model for structuring an inclusive classroom does not entitle them to extra resources. By combining classes, the allocated personnel and funds can be used more efficiently. Less duplication in the purchasing of materials and better use of existing personnel make this model possible without additional funds.

Summary

Current research and best practice demonstrate that programs that educate children with disabilities in classes with their non-disabled peers using developmentally appropriate curriculum and instructional strategies that address individual needs are effective. Rural school districts with limited resources are challenged to meet the needs of young children with a wide range of special needs across multiple ages. Inclusive classrooms that use a team teaching model provide programs that are educationally sound yet cost effective.

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PLAY-BASED PROGRAMMING: ADVANTAGES FOR RURAL EARLY CHILDHOOD SPECIAL EDUCATION

Early Childhood Special Education (ECSE) services are intended to "prevent or reduce the effect of a disability on a child's development" (Diamon, Hestenes & O'Connor, 1994, p. 69). Implementing services from a framework that is inviting and engaging to family members, as well as professionals, is central to the successful implementation of any individualized program. Professional responsibilities needed for interactive planning can be complex and overwhelming to ECSE professionals in rural areas who are often faced with limited staff and material resources as well as complex child and family situations (Aakhus & Hoover, 1998; Haring & Lovett, 1996; Weiss & Correa, 1996). ECSE involves structuring a holistic environment in which skilled professionals take individual responsibility to collaborate with families and other professionals to create comprehensive programming for children with varying developmental delays in various home and community settings. Two most basic skills used by practitioners include the ability to establish and maintain working relationships with families and to continue developing knowledge and skills that demonstrate effective practices. Professionals often engage in practices that are based on personal beliefs as well as community values causing them to maintain a range of varying practices across various school districts, classrooms, and agencies (Graue & Marsh, 1996). Varying practices without a strong foundation is confusing to both professionals and families because it leads to inconsistent identification of children's strengths and needs as well as program planning.

Rationale For Using Play-Based Programming

Although ECSE must remain flexible due to the inherent nature of community diversity and individualized services, special education program models should provide a continuous framework for serving children in a way that acknowledges the whole child consistently. The literature provides increasing evidence that models emphasizing play-based programming offer an avenue for professionals to actively engage in creative problem solving in order to expand intervention and curricular opportunities for all children within a generally accepted format. Children's play and adult support of play are strongly supported by the DAP guidelines discussed in the next section. These guidelines emphasize the avenue of child's play as vital to child growth and development and the most natural avenue in which children practice and spontaneously demonstrate their development (Bredekamp, 1987; Bredekamp & Copple, 1997). Moreover, play offers a flexible yet familiar structure for families and professionals to observe and facilitate whole child development while embracing diverse child characteristics and contexts (for examples see Jones & Reynolds, 1995; Linder, 1993a & b; McCord, 1995).

Developmentally Appropriate Practice Applies To All Children

Acknowledgement of the whole child with delayed, disabled and/or disordered development involves recognizing child and family characteristics beyond deficits or milestones of development in specific domains. The whole child concept recognizes that children develop across domains and within the contexts of culturally relevant environments and family routines. Discussions of recommended practices for educating or serving the needs of children typically refer to developmentally appropriate practice (DAP). DAP is defined by the National Association for the Education of Young Children (NAEYC) (Bredekamp & Copple, 1997) in their position statement and guidelines regarding recommended early childhood (EC) practices. ECSE guidelines are consistent with DAP (National

Association for the Education of Young Children (NAEYC), Division for Early Childhood of the Council for Exceptional Children (DEC/CEC) & National Board for Professional Teaching Standards (NBPTS), 1996). The concept of DAP is based on three interrelated, guiding components reflecting the field's current knowledge and shared beliefs about attributes of high-quality early childhood programming and are inclusive of all children. DAP includes 1) age-related characteristics of development (age appropriateness), 2) individual variations of strengths, interests, and needs (individual appropriateness), and 3) knowledge of social and cultural (sociocultural) contexts of children and their families (Bredekamp & Copple, 1997). Characteristics of practices considered developmentally appropriate include age appropriateness, interactive learning and teaching, and curricular activities individualized to emphasize child-initiation and independence (Bredekamp, 1993). Age appropriateness is based on expected sequences of growth and change typically related to chronological age. Beyond age-related expectations, the age appropriateness concept provides a framework for identifying sequentially identifiable mastered and emerging thinking and developmental skills to aid in preparing reasonably challenging materials, interactions and activities to children. Individual appropriateness recognizes each child with unique internal and external characteristics including pattern and timing of growth, strengths, needs and interests. Knowledge of each child's social and cultural contexts ensures relevance and respectfulness of children and their families when planning activities and facilitating learning experiences (Bredekamp, 1987; Bredekamp & Copple, 1997). In addition to the three guiding components, child-initiated, child-directed, teacher-supported play is considered an essential component of DAP because play is a "primary vehicle for and indicator of" children's learning and development (Bredekamp, 1987, p. 3).

The premise of DAP and incorporating children's play is simple, but the application in actual practice is complex. The DAP premise is simple in that only three components (i.e., age appropriate, individually appropriate and sociocultural relevance) provide general guidance for practice to recognize sequential development along with the quality of development and surrounding environments. The DAP premise is complex in that a wide range of practices is required to meet individual and culturally diverse needs within a developmentally sequential framework. Consequently, daily efforts of individual practitioners may or may not be consistent with current guidelines or knowledge of typical and atypical development of children's play. An intervention plan, even one that claims developmentally appropriate activities, cannot provide the art incorporating and facilitating children's spontaneous play. When working with children that are eligible for ECSE services, professionals must demonstrate an ability to facilitate and skillfully intervene to support existing family and community situations while embracing opportunities to support child, family and even professional development of new knowledge and skills.

Structures To Support Child Learning And Development

Regardless of philosophies and professional practices, early childhood curricular activities typically involve some level of play. Play creates an opportunity for social exchanges between young children and adults as well as between their peers and siblings creating the groundwork for developing social competence (Bricker & Cripe, 1992; Bondurant-Utz & Luciano, 1994; Cooper, 1996). Play is also the avenue of development that typically exists in the home and school setting giving more opportunity to extend strategies and activities across environments for continuity and consistency. Individualized planning for children with delays, disorders and/or disabilities has been typical of practices within Early Childhood Special Education (ECSE), but systematic use of child-initiated, adult-supported play activity has been limited. This limited use in ECSE situations is in spite of studies that identify the value of play for all children (for examples see Goodman, 1992; Safford, Spodek & Saracho, 1994). Marchant and Brown (1996) recognize play as an avenue for including children with developmental delays in environments with children considered to have typical development. These authors emphasize a balanced use of strategies in relation to a continuum based on play strategies to include nondirected play, guided play and directed play.

Peters, Neisworth and Yawkey (1985) refer to a similar balanced use of strategies to prepare a supportive learning environment for young children. They identify three structures for preparing the environment. A free discovery structure is one in which the adult provides materials and opportunities for children to choose, explore, discover and learn independently. A prompted discovery structure incorporates strategies in which the teacher makes specific props and materials available related to learning goals. Finally, the directed discovery structure is one in which the teacher guides child observations by presenting specific materials, preparing steps, asking questions and posing problems to help children meet objectives related to content or goals. Although each structure has differentiating qualities, the use of each should be balanced in the environment and integrated within activities to meet child learning, communication and social goals.

Beliefs About Children's Play

The unity and flexibility that a play-based structure provides allow professionals and parents to develop new knowledge and skills at an individual pace from various initial knowledge and skill levels. A recent study found that although a group of early childhood parents and professional respondents prefer particular types of structures for organizing child activities, all value play as an important component of supporting child development and learning (Pinson, 1998). The results of this study indicate that four beliefs about early childhood programming practices are described in relation to how play is used within each structure. The beliefs in the study were interpreted as Work - Play is the Child's Work in the Environment, Responsible - Play is Responsibly Structured, Expression - Play is Spontaneous Expression of Development and Learning, and Social - Play is Social Interaction. One way of structuring play might be through the perspective of people holding the Work belief suggesting that prompted discovery guides children to achieve self-directed milestone and pre-academic skill development as accomplished through play with toys and materials. Although people expressing this point of view presumably believe that intelligence is demonstrated in the ability to master pre-academic skills, they are likely to assume that children do not learn the skills directly from adults, but are likely to occasionally provide individual help if children need to feel successful. Perhaps another way of preparing for children's play is through the viewpoint of people who believe that play should be Responsible suggesting that children require directed discovery structures and adult involvement to participate in predetermined activities. Although the child learning processes expected might seem unclear to others, people who apply strategies from a Responsible point of view probably assume that the child's participation in the activity is the child's learning. People who behave from a point of view related to the Expression belief presumably merge learning, assessment and teaching/intervention strategies with play to balance the use of free, prompted and directed discovery structures. In application, they might balance the use of the structures by considering the quality of child interactions within individualized developmental growth goals. Still another perspective reflecting Social beliefs might expect children to take turns and share through the direction of adults by as they explore and create through free discovery play without adult involvement.

The emergence of four beliefs rather than the possible expectation of only three to reflect the three individual teaching structures, cause us to further examine the views represented in the Expression belief emphasizing play as the structure from which to implement various teaching strategies. Behaviors that tend to reflect an Expression point of view appear to be consistent with skills needed to provide a balanced application of teaching methods appropriate to individual child and group situations as listed by Peters, Neisworth and Yawkey (1985). The Expressed behaviors revealed in this study that reflect a balanced use of strategies include:

1. Play provides a skeletal structure from which to prepare an environment to support child learning and development,
2. Spontaneous play reflects individual child mastered and emerging developmental processes and skills to guide objectives within the environment,

3. Using play to assess the quality of child interactions (i. e., initiations, motivations and engagement) leads to effective decisions in the choice of teaching or intervention strategies,

4. A play structure is flexible in nature allowing for expansions and adaptations as needed to support child engagement and interactions.

Researchers involved with play-based models indicate that individual beliefs about early childhood program expectations and the value of play will affect the perceived usefulness and strategy implementation by professionals (for examples see Fromberg, 1995; Klugman, 1996). The respondents reflecting the Expression belief both participated in play-based training and program activities based on the Transdisciplinary Play-Based Assessment/Intervention (Linder, 1993a & b) and Storybook Journey Curriculum (McCord, 1995) models. Although pre-testing is not available to determine the effects of the play-based training and program activities on respondents representing the Expression belief consideration of the in-depth exposure to play-based models is warranted. This consideration in conjunction with the consensus between beliefs that play is educationally valuable to children may provide a key to supporting professional and parent development of the skills necessary to expand teaching/intervention strategies to adequately address child and situational diversity.

Examples Of Play-Based Programming Models

Two play-based programming models prepared to meet this task are Linder's (1993a & b) Transdisciplinary Play-Based Assessment/Intervention (TPBA/I) and McCord's (1995) Storybook Journey Curriculum (SJC). Together these models provide comprehensive information regarding play and general child development, environmental design and adult facilitation of children who are considered to have typical development as well as children with atypical development (i.e., delays, disabilities, disorders, advanced, etc.). They provide in-depth resources for professionals to actively develop skills in observation of children's play, the use of play facilitation strategies and a curriculum planning process, which embraces children at varying levels and with unique differences. More importantly the models can be incorporated as needed to support interactive parent and community child settings to provide programming that actively supports and encourages children from diverse cultures, families, and situations. Combining the TPBA/I and SJC models as a framework for EC programming provides activities in the use of facilitation strategies that are consistent with DAP and the previously described continuum of teaching structures (i. e., free, prompted and directed discovery).

The play-based programming emphasizes curriculum and intervention planning around the scope and sequence of children's play and development listed in the Transdisciplinary Play-Based Assessment (TPBA) (Linder, 1993a) under the four domains of cognitive, communication, social-emotional and sensorimotor to ensure developmentally appropriate practices. This means that age appropriateness is addressed when each child is identified at a particular sequence based on his/her mastery as demonstrated by spontaneous play behaviors. Then individual appropriateness and sociocultural relevance are addressed through the interventions in Transdisciplinary Play-Based Interventions (TPBI) (Linder, 1993b) and curricular activities in the Storybook Journey Curriculum (SJC) (McCord, 1995). The flexibility of the interventions and in choosing children's literature (i. e., storybooks, poems, songs, etc.) invites an educated yet creative level of family-professional collaboration to provide support for children's unique development patterns and cultural situations. The combined TPBA/I and SJC Models provide a comprehensive framework for assessment, intervention and curriculum using the umbrella of six different categories/levels of play.

Transdisciplinary Play-Based Assessment/Intervention (TPBA/I)

The categories/levels of play, listed below, are considered within an environment prepared with free, prompted and directed discovery activities to facilitate the ability of children to conceptualize, organize and act out developmental skills and learning without modeling or prompting by others. The author states, "When children are engaging in play, they are functioning close to their optimal developmental level" (Linder, 1993, p. 4). In order to identify the skills that children have mastered and determine those skills that they are ready to learn, or emerging skills for which interventions can be planned, the child's primary category of play and interest area is identified. Even though children move through the categories sequentially associated with expected age ranges, the categories are also dynamic in that children incorporate lower levels of play as they acquire new skills in relating objects and thinking in more abstract terms. The categories/levels of play listed below are adapted from the books and institute of the TPBA/I Model and can be assessed and facilitated using existing materials in a variety of settings.

1. Exploratory/sensorimotor play typically develops and expands during the 0 to 24-month age range. The child engages in an activity simply for the enjoyment of the physical sensation. Repetitive movements, noises or gross motor activity are typical of this category (e. g., blowing raspberries, repetitive pouring, climbing up & down steps).
2. Relational/Functional play is expected to develop over the 9 – 24-month range. The child uses objects in play for the purposes they were intended. This level of play leads the child into the exploration of interrelationships among objects & events and encourages development of skills needed in dramatic play, the development of spatial, causal & categorical relations.
3. Constructive play skills typically begin to develop around 24 - 36 months and expand qualitatively throughout the preschool years. The child manipulates objects for the purpose of constructing or creating something. The child has an end goal in mind that requires transformation of objects into a new configuration. True construction is not seen unless a structure is created.
4. Dramatic play activities develop during the 21 - 72 month range. The child pretends to do something or be someone with objects, without objects or through inanimate objects such as toy characters. Between 2 to 4 years play becomes more elaborate with complex combinations and the ability to plan events and roles. The activities develop from the representational level beginning around 11 - 12 months in which children represent something seen by their actions to the symbolic level in which children represent something in the world with ideas not using the real object.
5. Games with rules typically begin around 60+ months. This involves children having shared expectations and a willingness to conform to agreed-upon procedures with an existing or made-up game. The child must have a social understanding of roles in games, a concept of competition (winning and loosing), persistence and recognizing that the rules or guidelines remain the same from situation to situation.
6. Rough and tumble play develops around 36 months and continues to 48-60 months. This type of play involves boisterous and physical activity with two or more individuals done in a playful manner. This involves social boundary setting and is not the same as aggression.

Identifying the primary category of a child's spontaneous play rather than adult-chosen and directed activity is important to determining child strengths such as the level and functional use of specific skill mastery, length of attention span, and a willingness to initiate, persist and master various tasks and social interactions. Observation of these child play qualities provides vital clues to professionals and parents planning interventions with the expectation of child engagement and progress related to specific developmental goals and objectives. The six-stage TPBA process occurs over a one to one-and-a-half hour session with parents and professionals present. The session includes unstructured play, structured play, peer interaction, parent-child interaction, motor and snack. The assessment process emphasizes child spontaneity and direction, but provides opportunities and guiding questions to observe child responses to activities, adults and peers. Opportunities also exist to observe and assess the child's response to various interventions demonstrated by parents and professionals. For example, if a child with delayed communication skills is more conversational while playing with dolls than when naming pictures presented by an adult, intervention ideas should consider ways to structure doll play with peers or adults who model language the child is likely to imitate and develop.

A powerful advantage of the TPBA/I Model is that parent participation is systematically built-in to the process. Parent participation includes: natural play interactions, information exchange with professionals regarding typical and atypical child development and discussions of unique child and family qualities within the comfortable framework of child's play and family routines. Natural play interactions between the parent and child during a portion of the play assessment session allows professionals to support and encourage enriching family interactions. Information exchange with the professional team regards typical and atypical developmental sequences and expectations in relation to the child's and family's unique qualities and are not limited to age milestone expectations or child limitations. This information exchange helps to clarify parent concerns and priorities within the discussions between family members and professionals, which in turn ensures identification of typical home behaviors that are consistent or inconsistent with assessment and school behaviors.

Within this play-based framework, therapists (i.e., speech-language pathologists, physical therapists, occupational therapists and psychologists) combine integrated, direct and/or consultation services to other therapists, teachers, child developmental specialists and parents. This consultation role includes facilitating the planning and intervention process to support play activities and daily routines that encourage specific skill development or accommodations within the framework of each child's overall quality and sequence of development. Integration of therapy interventions with teacher or caregiver support in an EC setting and parent support at home theoretically and practically encourages each child to generalize learned behaviors to various settings and situations. Forms are provided to plan ways to integrate interventions in the home within family routine activities as well as within community child settings.

Storybook Journey Curriculum (SJC)

The Storybook Journey Curriculum (SJC) process stimulates creativity among adults and provides a structure for designing activities relative to child intervention and developmental needs (McCord, 1995). McCord explains the process of curriculum planning, environmental design and developmental implications of using this play and literacy-based curriculum that can be adapted to home, school or other child settings. The planning process of SJC begins by selecting and reading a story so that team members know the story well. Team members consist of any combination of parents, teachers, therapists and other professionals or family members that contribute unique ideas and expertise. Even children may want to contribute. The team then brainstorms activity ideas that will "bring the story to life" (McCord, 1995, p. 6) within the arrangement of typically expected EC centers and play activities. The team maps out a weekly (or longer) plan in which the story is read daily to the children and activities are designed to invite play through story-related concepts and themes. The model provides a flexible, but concrete structure to encourage child spontaneous and teacher facilitated play in which children develop cognitive, communication, social-emotional and sensorimotor processes and skills. The developmental implications of this creative, yet substantial curriculum structure built on children's literature include the following:

1. The Rhythm of the Words provides an opportunity for children to play with the sounds of their language through simple sounds, verses and songs that lull children into listening. The adult can use clapping, knee tapping, drumbeats or other instruments to accentuate the rhythm of words (use of our ears & bodies) or combine large motor movement with words to enhance the rhythm and speech connection.
2. Repetition for Mastery ensures that children experience a story in many different forms with exposure over time so that the story becomes a scaffold on which children can build knowledge. Children need various modalities to internalize and master the elements of a story rather than repetitious drill. For example, repeat the words of the story using sand play, flannel boards, puppets, dramatic play, art, etc.
3. Predictability supports children's mastery of a story, providing a safe way to participate in related play activities.
4. Sequencing of Stories should start with simple, repetitive stories and move on in complexity

when children are ready as demonstrated by ability & temperament (e. g., some prefer long, complex stories while others attend for only short periods). Long stories can be simplified through puppets or storytelling, so that children can have a common experience with the story. In addition, acknowledging the beginning, middle and ending parts of books helps children master sequencing concepts and to order the story from memory, even expanding on the details.

5. Thematic Confidence allows children to create spontaneous reenactments or guided experience during group time with other children providing an avenue for increased confidence in moving from self to others within the story's theme.

6. Practicing Narrative Discourse of the stories becomes a scaffold or framework to support children's attempts to relate to each other and adults. Stories give children practice in communicating with each other as they act out what they know and remember or improvise about the events or concepts.

7. Basic Vocabulary Building occurs when the adult is sure to pause while reading to give children the opportunity to clarify what they do not understand. Relating vocabulary to children's experiences insures that the meaning is relevant and its use is natural.

8. Expanding World Knowledge Through Schema & Scripts provides more information and experiences for children creating a stronger foundation for constructing a comprehension of the world. They can build on personal knowledge and experiences.

9. Providing the Stage for Creative Extensions allows children to use an existing story line as a springboard to practice the story form in different ways encouraging them to become more adventuresome. The process evolves slowly from the adult telling them stories to children telling the adult stories to children writing their stories down.

10. Peer Interaction/Socialization is inspired with the story as the connecting link because the story line is the common thread that connects children with their peers and adults in socialization, acceptance & meaningful interaction. The story line provides peer camaraderie, sharing of a common topic and a focus for discussion to encourage social conversation.

11. Environmental Components include centers typically expected for young children and their play activities designed to meet a wide range of developmental levels and needs. The environment must provide realistic story props to help children organize the perceptual space needed to reenact a story line. Yet children ready to use imagined or symbolic props may reenact the story in other parts of the room, not needing realistic props.

12. Family/Community Partnerships/Links to Home provide an opportunity for adults and older children in the family and the community to model the importance of reading, writing and communication. Activities might include participation of family members, community friends and professionals sharing their interests, hobbies and professions and how reading and writing affect their jobs or just their fun.

Conclusion

Professional ECSE practices must be based on intense knowledge of typical and atypical child development, strategies to facilitate and encourage child growth and communications inviting active family participation. The advantages of implementing play-based models for building family-professional relationships and developing new professional knowledge and skills in urban or suburban districts extend into the rural setting. A particular advantage includes the ability to use existing materials and settings within rural communities and homes to assess, plan and implement activities in collaboration with family input and skills. In addition, observing spontaneous child behaviors and strengths leads to professional-family discussions rather than professional reports on areas of concern and expected development. Professionals and family members who engage with a child in play provide an opportunity to demonstrate interactions with the child so that professionals learn about family expectations, beliefs, skills and needs. In turn, play-based programming provides a framework in which continuous and consistent practices allow professionals to convey useful information to parents in simple terms related to the child's natural home and/or community play and routine activities (Linder, 1993a & b; Nourot, 1995). Intervention and curricular recommendations become a direct result of this family-professional interaction in which ideas to facilitate child mastered and emerging skills are created together with support for family strengths and needs. By accessing models that emphasize child's play to guide professionals and parents in supporting each child's sequential and unique developmental qualities, a solid framework is provided from which to build more continuous practices consistent with developmentally appropriate practices for all children.

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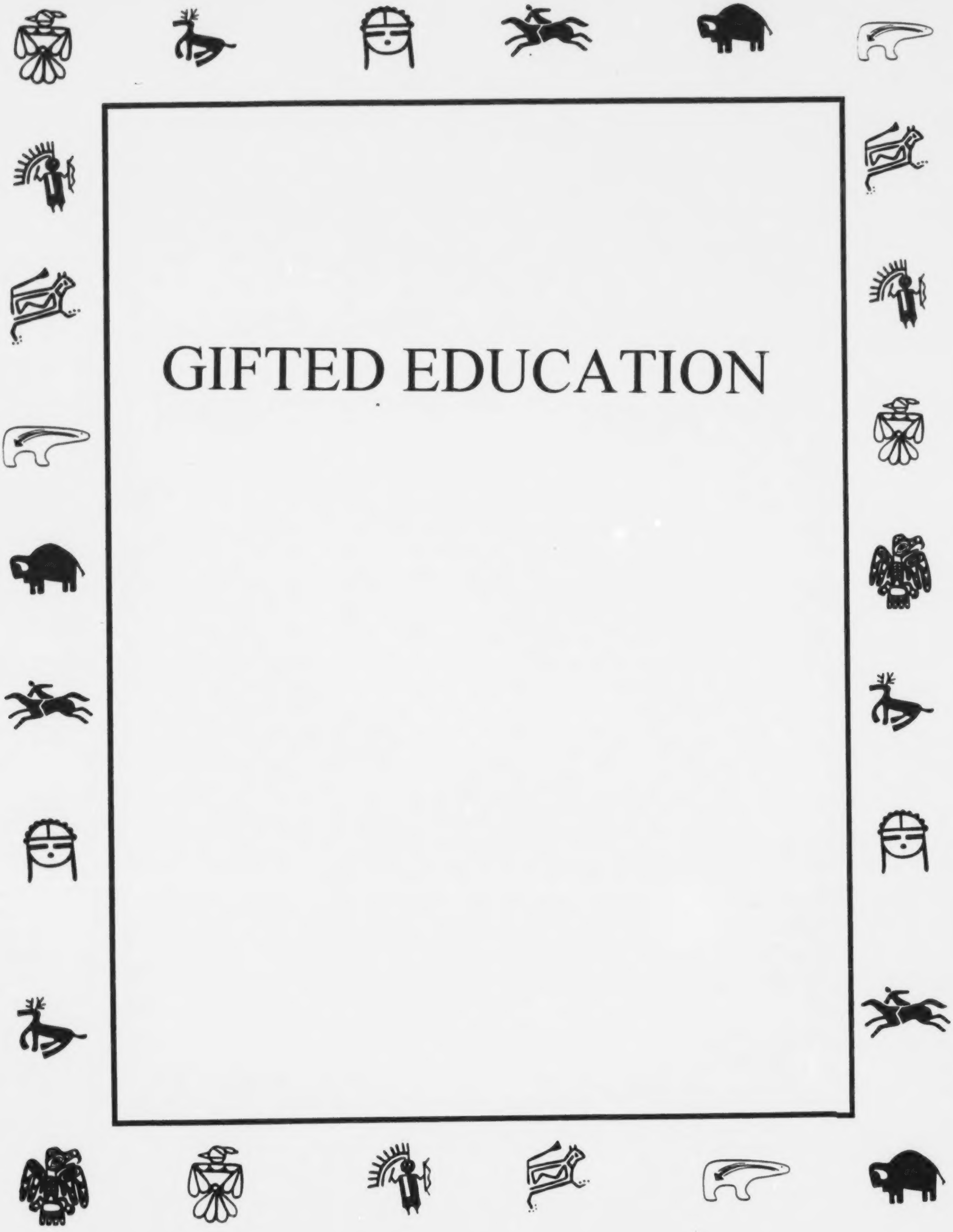

GIFTED EDUCATION

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INCREASING NATIVE AMERICAN INVOLVEMENT IN GIFTED PROGRAMS THROUGH AUTHENTIC DISCOVERY AND RURAL LINAGES

A persistent concern in the field of gifted education is the widespread under-representation of minority students in programs designed to meet the needs of gifted students (Ford & Harris, 1990; Frasier, 1997; Passow & Frasier, 1996). For native American Indian students, the problem has been defined according to a variety of needs: need for appropriate measures (George, 1987), need for cultural responsiveness (Montgomery, 1989) need for appropriate language and relevant cultural characteristics (Peacock, 1979), need to accommodate the predominantly rural nature of schools providing educational options for Indian children and youth (Spicker, Fletcher, Montgomery, and Breard, 1993) and a need to address alternative learning styles (McCarty, Lynch, Wallace & Benally, 1991). Additionally, a critical need for a multicultural curriculum for all gifted students has been identified (Ford, Grantham & Harris, 1996).

Project LEAP

Project Leadership Excellence Achievement and Performance (LEAP) was designed to respond to the needs of gifted students enrolled in secondary schools in rural areas. Its purpose was to identify and serve students who are gifted and limited English proficient, handicapped, minority, culturally diverse, or economically deprived. All students are enrolled in rural residents or geographically isolated. The purpose of the curriculum was to fully develop intellectual, creative, artistic and/or leadership abilities. Project LEAP was designed to serve as a model program for potential replication in rural districts with similar populations throughout Indian country in the United States; therefore, many products have been developed to communicate its intentions, practices and outcomes.

The purpose of this discussion is to describe Project LEAP and demonstrate how the two major overarching outcomes of the project, authentic discovery and rural linkages, provide the framework and foundation for the success of the project. Project goals are discussed with specific indicators of success provided as documented through the evaluation component of the project.

Project Description

Project LEAP is a Javits Gifted and Talented Students' Educational Grant Program. The funding for Javits projects has had as its focus on populations of children and youth who are underrepresented in programs for gifted learners. LEAP was developed to include collaboration, identification, curriculum development and community/parent involvement. The project communities are impoverished, rural and isolated. Approximately 64% of the 7,000 residents in these communities are documented American Indians. Native American students represent 57% of total school enrollments. All four high school sites have a large enrollment of low income families (average; 53%) and limited English proficient students

(62%). The target students identified for Project LEAP were not currently identified or served within programs for gifted students.

Collaboration

Participating districts are part of the formation of the Osage County Interlocal. Cooperative (OCIC) organized to effectively serve students in a cost efficient manner. An Educational Assistance Team implemented program instructional activities. The Team included a Project Director, three Resource Specialists, and three Educational Assistants. The Resource Specialists were itinerant, dividing their time among the target districts. The Educational Assistants were site-based.

In addition to the administrative linkages that existed among the high schools through the infrastructure of the cooperative, the linkages each member of the Educational Assistance Tem established with and between students, parents, communities, and other projects contributed to the success of Project LEAP. Exit interviews with staff, interviews with students and teachers, and on-site observations reveal strong bonds among project staff, students and others not receiving direct services from project staff. The boundaries that typically demarcate those students in the gifted program and those students not in the program were diminished in importance. Project staff held numerous special events, service learning projects and activities associated with curricular units that were invitational to all interested students. This was evident in all facets of Project LEAP. One example is the Career Fair that was held in October, 1997. Other events commonly held may be planned by a lead school, but supported by Project LEAP, Project REACT, a Title VII Bilingual Education Program, and the Title IX Indian Education Program. In additional to the project links, the communication links are apparent with other faculty members at each school, with families of students in all schools, and with all students at each site.

The outstanding characteristics of rural schools that contributed to the success of the project is the necessity for teachers, administrators and project staff to hold more than one position (Helge, 198 1; Putnam, 1986). Project staff would be able to work with many different students without having to delimit the type and nature of the work done with students. The authenticity of meeting individual needs was a priority.

Identification

The project served over 120 students in grades 9-12 in four rural high schools from separate school districts. Identification was by necessity an ongoing process for Project staff at all four schools. During the first month of each of the three project years, a large proportion of energy was invested in gathering identification data. Of the over 120 target students identified for project participation over three years (some participated all three years), about 60% of the students were Native American. Of the students served by Project LEAP, 87% were students who were never served by the traditional gifted programs at their school district. The screening and identification process was developed by project staff in collaboration with administration and teachers in the schools and includes a weighted matrix. The following criteria were included in the weighted matrix: Grade Point Average, Achievement Test Composite Score, Achievement Test Individual Sub Test Score, Nomination by Teacher, Nomination by Peer, Analysis of Student Survey, Student Product Analysis, and Identification Review Team Recommendation.

Although a numerical value was assigned to the criteria, a case study approach in which the evaluation of portfolios of student product was the final determination for project placement. After placement in the Project, students maintained their own portfolios to reflect student growth and progress throughout the project. Decisions about curriculum development, implementation, evaluation were determined based on the success of student participants. Each student in Project LEAP contributed to his or her admissions portfolio data to exit the Project with academic documentation. As a strategy to promote continued interest in college, a Career Portfolio was developed to focus on educational goals and planning for the future. The Project staff continually monitored the portfolios and other indicators of student success to alter and modify program activities.

The authenticity of the identification process rests in the use of the student portfolio. Project evaluation data reveal that a process where quantitative recordings of data using only those data that could be obtained for all students was not the priority goal in implementing the identification system. Rather, collecting data that portrayed the strength of each student, soliciting information from alternative sources, such as people who knew the student outside of the school setting, and using information that required subjective evaluations from others took a precedence. It is important to note that equity and fairness was granted each student in a way that relied less upon relative standing in statistically normative terms than on identification of the individual needs of students.

Curriculum

Project LEAP provided students with individualized instruction and specially developed study units. The study units incorporated and encouraged growth in all phases of school life. The project curriculum consists of challenging content and performance standards in the core subjects designed to raise students' achievement. Academic support was provided to enhance leadership skills, establish high academic goals, improve evidence of achievement, and promote development of talent performance. The study units were focused in six areas: Pre-College Orientation; Career Education; Motivation and Self-Esteem; Cultural Heritage of the Indian Tribes of Osage County; Writing Skills, Prose and Poetry; and, Research Skills.

Project students demonstrated an overall increase in performance on the ACT/SAT scores. One reason for the overwhelming increasing was the dramatic increase in the number of students who were taking the ACT or SAT as a result of participation in Project LEAP. All Project LEAP students are encouraged to take the ACT, with greater numbers of 9th and 10th graders accepting the invitation. For example, whereas before Project LEAP no high school students took the PSAT, over three years of the project over 5 have taken the PSAT. Additionally, twice as many students are retaking the ACT to improve their scores after taking the preparation lessons within the Pre-College Orientation Unit. Scores are increasing with each subsequent retake.

Project sites show statistically significant increase in the number of students applying for college admittance. Nearly all students as seniors submitted applications to college. No student was denied acceptance to college; although some students have chosen other career paths. Project LEAP has provided extensive information about colleges and careers, particularly through the Career Fair that was developed and delivered each year to encourage college and career exploration for project students. In addition, the Pre-College Orientation Unit included visits to a university campus, guest speakers, Internet access to university information, and other valuable resources. Project staff worked closely with the school counselors, students and parents to provide assistance with college applications, financial aid and scholarship applications. Project sites increased the number of students who receive scholarships and financial aid. In any year, all of the seniors (100%) in the project applied for some degree of financial aid and/or scholarships.

Curriculum and lesson plans were developed to respond to student needs according to assessed strengths and interests. The six units of study are available for dissemination to other rural schools. Knowledge and achievement were documented through portfolio assessment and assessment rubrics were developed and are available from the Project Director. All unit guides have a specific focus to utilize language and culture. The language and culture of the Native American tribes represented in the project is emphasized in all six study units.

Community and Parent Involvement

Important linkages in rural communities include relationships within the schools and outside of the school as well. Both linkages were well planned for Project LEAP. The within schools linkages included extensive Professional development of project and school-based staff.

For small schools in rural areas, close ties to the community and parents are important to foster. Project LEAP kept the community informed of the project through news releases, photos in local newspapers, community events, and student service learning projects. A strong parent education component was correlated with each of the study units with many parents getting involved in activities with the school for the first time. The project had as one of its goals to develop parental awareness, understanding and involvement with abilities and needs of their child by providing parents with information and educational assistance. One area that was innovative to typical school practices was the inclusion of knowledge of the options available for their child's future educational needs. By informing and involving parents, greater support for their children's educational progress was achieved.

The project distributed evaluation surveys to project parents that measured opinions regarding parent training sessions that were held in conjunction with the six curricular units. The surveys allowed recipients to rate the training on a scale from 0 to 5 (O=very poor, 1=poor, 2=adequate, 3=fair, 4=good, and 5=excellent). Tallied survey results indicated that the overall success of the project parent training was rated "good" to "excellent". Project staff designed a PowerPoint presentation of Project LEAP presented at the various Parent Orientation Meetings. Of the parents who participated, the response was overwhelmingly positive. Efforts must be consciously planned in order to encourage greater parent participation at the high school level.

Conclusions

Two essential components contributed to the success of Project LEAP: the authenticity in identification and the collaboration and linkages among and between the schools and community. Although an elaborate system of collecting, analyzing, and utilizing individual data was implemented, the value in providing unique pieces of data to demonstrate individual needs of students remained a priority. Students were afforded services based on demonstrated or potential need, rather than space in a restricted program. The portfolio contributed to documentation of need and allowed authentic assessment strategies to be continued in the curriculum.

The project was able to maintain continuity in its connections with school and community by retaining the superior quality of Project staff who valued the important linkages within, between and outside of the high school involved. Although some personnel changes were made throughout the project, continuity and qualifications remained high. Two of the three Resource Specialists had Master's Degrees, two were Native American, and all certified personnel had extensive experience with gifted and talented education. Two of the three Educational Assistants were college graduates and members of the Native American Tribes represented by many of the target students. The professional expertise of the project staff was a strong factor in the positive response to the program by students, parents, teachers and administrators at the four participating sites.

Another key factor is the inclusive interaction of all Project staff with other faculty and students at each high school. The nature of the small and rural school demands close interaction, essential linkages, and collaboration for the success of all students, rather than the exclusive treatment of any one group of students. Project LEAP students and parents continue to participate in several school programs.

Another important factor is the communication linkages of Project LEAP with other programs within the target districts. The Osage County Interlocal Cooperative (OCIC), the administrative unit for Project LEAP in the schools has a unique administrative status in education. The OCIC serves as the coordinator for multiple programs within the districts and is able to integrate professional development, parental involvement, multicultural activities, acquisition of technology, technology training and many other aspects of education in a cost effective and collaborative manner.

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TEACHERS' PERCEPTIONS OF CURRICULUM MODIFICATION FOR STUDENTS WHO ARE GIFTED

Educators are faced with a variety of challenges in today's classrooms. Teachers must adapt the curriculum and learning environment to provide a classroom climate that meets the academic, social, and emotional needs of the students who have a wide range of readiness skills, learning styles, and curricular needs. Expectations for excellence at the national level, state curriculum requirements, and local school district guidelines restrict the choices an educator has regarding the development and implementation of the curriculum. Furthermore, each teacher has a background of experiences that influence how he or she perceives what each learner needs (Good, 1982) and what the appropriate educational response to the need might be (Johnson, 1993).

There is greater complexity in the diversity of students in classrooms today. The learning needs of students are often determined by school psychologists or other educational specialists to correspond to various educational diagnoses, such as learning disabled, emotionally disturbed, gifted and talented, or any combination of a other educational descriptors. Special programs are provided to the general education classroom environment for these students. Teachers respond to the diagnosis of student need and programming in two major ways: (1) concern about the overall welfare of the child as the teacher strives to determine appropriate curriculum, and (2) concern whether specialized treatment is necessary for the child with diverse learning needs (Robinson, 1985).

Recent trends in education have shifted from separate programs for children identified as needing differentiated programs to inclusive classrooms where students with diverse abilities receive specialized instruction together in the general education classroom. This means that students who are learning at a different pace, breadth, and depth are being taught using the same curriculum structure and class environment. General education teachers find "teaching to the middle" a method of instruction as a response to such demands of diversity (Tomlinson, 1995). The question to ask, however, is how many children are actually in "the middle?" What happens with the student who requires additional time and explanation on an assigned task when the teacher is ready to move on to another topic? Likewise, questions must be asked about the curriclum for the student who catches on to a concept quickly, does not require drill and practice, and does not fit into this one-size-fits-all classroom (Tomlinson & Kiernan, 1997).

Differentiated Curriculum

Differentiating instruction for diverse learners is an educational phenomenon that enables teachers to develop and implement curriculum that is appropriate for all students (Tomlinson, 1995; Tomlinson & Kiernan, 1997). Students are successful in differentiated classrooms because the teacher is planning and implementing curriculum based on each student's own level of readiness (Tomlinson, 1995) and moving the student forward with skills, knowledge, and educational relevance, rather than teaching all students in the same way.

The impact of this type of instruction on students who are gifted and talented is far-reaching. Students may be learning more advanced concepts, developing more dynamic products, and understanding connections between what is being taught and how the information fits into the real world. How the teacher perceives his/her classroom of diverse learners influences the methods of instruction employed in that classroom (Carter, 1971; Rubenzer & Twaited, 1979).

Appropriate curriculum development for students identified as gifted and talented ensures that there are qualitative differences from the general education curriculum in content, process, product, and learning environment (Maker, 1982). This means that students who are gifted and talented are provided with expanded educational opportunities, rather than more of the same (MOTS) projects and assignments. The development of curriculum should be differentiated for learners who are gifted and talented, meaning that instruction is integrated and adapted to the varying levels of student readiness and ability. High levels of cognitive and affective concepts and processes are employed in the differentiated classroom. Student product development is based on the individual student's educational needs and goals. The differentiated learning environment is flexible, allowing students to work individually, in small homogeneous or heterogeneous groups, or in a whole class setting (Maker, 1982; Tomlinson, 1996).

Differentiation of instruction for students who are gifted and talented focuses on the elaboration of the presentation of learning opportunities, the diversity of methods of presentation, and the variety of student products and student assessments (Tomlinson & Kiernan, 1997). Students are exposed to content learning opportunities outside of the limits of the textbook and the typical age/grade expectations. Allowing additional work time, materials, and resources encourages flexibility in the general education curriculum. Students develop critical thinking skills through the integration of content subject matter. Assessing student products requires individual grading rubrics rather than one set of criteria for the entire learner population (Tomlinson, 1995).

Content Differentiation

Differentiation of content is defined as modifying what is being taught to the student (Maker, 1982; Maker & Nielson, 1996; Tomlinson & Kiernan, 1997). Appropriate content for students who are gifted and talented is more complex, more abstract, and more varied than that of the general education learner. Included in content modifications is the study of creativity and creative productivity (Shanley, 1993). Complex content includes the manipulation of more concepts, abstract concept relationships, and the integration of concepts across disciplines or fields of study. Abstractness takes the learner from the data level (focusing on facts and isolated information) through concept development (focusing on ideas and classes of knowledge) to the generalization level (focusing on the student's ability to impose conceptual knowledge on a wider field of understanding). Varied content incorporates the idea of enriched content as the learner is involved in a systematic sampling of different types of content.

Process Differentiation

Process modification is described as the way educators teach (Maker, 1982) or how the students make sense of what they are learning (Rosselli, 1993; Tomlinson, 1995). The teacher who is making appropriate process modifications employs higher level thinking strategies, open endedness, variable pacing, and student discovery. Emphasizing the use of a body of knowledge rather than the acquisition of that knowledge enables the learner to develop higher levels of thinking skills. Encouraging divergent thinking more than convergent thinking defines curriculum open endedness (Maker, 1982), as students look for many, varied, and unusual solutions, not just the one correct answer. Flexible pacing allows students who demonstrate mastery of a concept or set of concepts to move on to the next level regardless of the overall pace of the classroom. Developing skills of inductive and deductive reasoning permit students who are gifted and talented to value discovery learning where looking for the answers is an important as solving the problem (Tomlinson, 1995).

Product Differentiation

Student products allow the learner to demonstrate his/her understanding of content and processes. Modifications in products for students who are gifted and talented include having real problems and audiences (Maker, 1982; Reis & Schack, 1993), using authentic assessments (Renzulli, 1977), and transforming and synthesizing information in a meaningful way (Maker, 1982). Real problems and real audiences encourage students to work with a specific purpose in mind instead of completing tasks for a classroom grade (Renzulli, 1977). Assessments of student products in a differentiated classroom include the use of established criteria by which the student, members of the real audience, his/her peers, or the teacher will make the evaluation. Product transformation and synthesis occurs as students demonstrate the interconnectedness of information rather than a summary of the facts.

Learning Environment Differentiation

The learning environment in a differentiated classroom is not chaotic (Schiever, 1993; Sisk, 1993; Tomlinson, 1995), but rather interactive. Educational settings where differentiated learning environments are found emphasize student centeredness, independent, and mobility. The focus of a student-centered classroom is on the learners, with the teacher assuming the role of facilitator where he/she once was the sole dispenser of knowledge (Tomlinson, 1995; Tomlinson & Kiernan, 1997). Student independence includes freedom of student choice and teacher tolerance for student diversity. Mobility of students is important in a differentiated classroom as students are free to move among and between workstations and learning areas to complete tasks. Classroom management and mutual student-teacher respect contribute to a successfully differentiated learning environment.

Teacher Attitudes

Personal attitudes about how students should be taught prevail for teachers and administrators. These attitudes influence what curriculum is relevant and the nature of the physical location where students should receive their education. The teacher's beliefs and perceptions are evident in the types of questions asked of students in his or her classroom, the types of feedback given to students (Good, 1982), the grade level and subjects preferred, and the reinforcements provided for students. The effect of teacher beliefs and perceptions influences the teacher's academic expectations of students with varying academic abilities.

The purpose of this study was to describe the ways that teachers perceive the education of students who are gifted and talented. The perceptions were determined based on how teachers believe they adapt curriculum to meet the needs of students are gifted and talented, and how they thought such students should be taught. Teacher perceptions were studied using a Q-sort, with sample questions extracted from literature relevant to differentiation of the education for students who are identified as gifted and talented.

The research question of primary interest investigated in this study is:

1. What are the predominant beliefs related to teaching practices for students who are gifted and talented?

Method

Q methodology is a research method that can describe subjective opinions about behaviors and compare the relative strengths of those behaviors according to the beliefs of any individual

(Montgomery, 1983). The method is comprised of established procedures and a conceptual framework that assist in defining a particular phenomenon (Brown, 1993), in this case, teachers perceptions of curriculum modifications for students who are gifted.

Participants

Seventeen (17) educators participated in this study. Five (5) were teachers in general education, two (2) were administrators, and (10) were teachers who spend more than 75% of their time in gifted education. Participants ranged in experience from 2 to 27 years and were from public school districts located in Oklahoma. Ten (10) of the educators were from rural school districts with five considered to be remotely located (more than 50 miles from an urban center) and five of the ten were located closer to towns or cities. Seven of the participants were from urban school districts. Five of these seven were from school districts located in the inner city, one was from an affluent urban district, and one was from a college town. Fourteen (14) of the educators were women and three were men.

Instrument

A concourse is the set of opinion statements representing all possible statements related to the study (Brown, 1980). Concourse theory was used to generate items for the study. Statements about curriculum modifications for gifted students were extracted from the literature and organized by using a theoretical framework (see Table 1). Two theories were used to construct the matrix for the development of statements for the Q sort. The theories were the major principles of curriculum modification for students who are gifted (Maker, 1992) and the three levels of differentiation found by Tomlinson (1996) in a middle school case study.

Table 1
Theoretical Framework for Q-Set on Curriculum Modifications for Gifted Learners

		Levels	
Principles	No Differentiation	Micro Differentiation	Macro Differentiation
Content	5	5	5
Process	5	5	5
Product	3	3	3
Environment	3	3	3

Over one hundred (100) statements of strategies and recommended practices for the education of the gifted and talented were obtained through relevant literature (see Shore, Cornell, & Robinson, 1991; Van Tassel Baska, 1994; VanTassel Baska, 1997). Statements were reviewed and refined by a panel of experts which included two (2) university faculty members, four (4) public school administrators, and three (5) teachers in regular and gifted education who were experienced in educational trends relating to the education of students who are gifted and talented. Each member of the panel of experts was instructed to review the statement according to literature in the field of gifted and talented education, redundancy, range of meaning, and language used by teachers in public schools. After the review by the panel of experts, forty-eight (48) statements were retained as statements or items on the Q-sort to represent the theoretical categories. The form board was constructed to present a range of 11 piles or column with a specified number of items or statements to be placed in each column so all statements are placed in only one place on the board. The following distribution was used: 2-3-4-5-6-8-6-5-4-3-2

Procedures

Respondents completed the Q sorts under two conditions of instruction: (1) What do you believe you are currently doing in your class for gifted students? and (2) What do you believe is the ideal way for teaching gifted students? The first condition of instruction seeks what participants perceive as their actual instructional practices for students who are gifted and talented. The second condition of instruction elicits what participants believe would be the ideal educational approach related to the education of students who are gifted and talented.

After the second sorting, participants completed a post-sort question that asked for other ideas about curriculum modifications for students who are gifted or any other comments or explanations for either sort. This question serves two purposes (1) it allows participants to express ideas that might not be clearly stated in any of the statements and (2) the responses serve as support Interpretation. As much information as possible is collected to interpret the factors according to the meaning the statements held for those people whose Q-sort loaded on the factor considered for interpretation.

Q sort data were coded and entered in PQMethod (Schmolck, 1997) software application program. The analysis program first correlates each of the sorts to each of the other sorts, then a principle components factor analysis was conducted, followed by varimax rotation and factor interpretation to respond to the research questions.

Results

Each of the seventeen (17) participants sorted twice which yielded 34 sorts for the analysis. Each Q-sort was correlated with all others followed by a factor analysis using principal components technique, although centroid analysis is recommended by Q methodologists (Brown, 1980, McKeown & Thomas, 1988), principle components provided the greatest statistical efficiency for the varimax rotation. A three factor solution was chosen as the best fit because it accounted for more of the sorts than the four factor solution. Although thirteen (13) sorts were confounded (loaded significantly on more than one factor, only two sorts did not significantly load on any factor). The level of significance was established at a common default of .45 to determine factor loadings (Table 2).

Table 2
Significant Factor Loadings for a Three-Factor Solution

Demographic of Q sorter	Factor 1	Factor 2	Factor 3
1. Actual Female GT Rural	X		
2. Ideal for #1	X		
3. Actual Female GT Rural			
4. Ideal for #3			
5. Actual Female GT Rural (remote)		X	
6. Ideal for #5			
7. Actual Female Admin Urban (inner city)			
8. Ideal for #7			
9. Actual Female GT Urban (inner city)			
10. Ideal for #9		X	
11. Actual Female GT Urban (inner city)			X
12. Ideal for #11			X
13. Actual Male English Urban (inner city)			
14. Ideal for #13			X
15. Actual Female GT Urban (inner city)			
16. Ideal for #15	X		
17. Actual Female English AP rural (remote)	X		
18. Ideal for #17			

Demographic of Q sorter	Factor 1	Factor 2	Factor 3
19. Actual Female GT Rural		X	
20. Ideal for #19		X	
21. Actual Female GT Urban (affluent)			
22. Ideal for #21			
23. Actual Female Elem Rural (remote)		X	
24. Ideal for #23			
25. Actual Female GT Urban-college		X	
26. Ideal for #25			
27. Actual Female general Rural (remote)			X
28. Ideal for #27			X
29. Actual Male Sec-Tech rural			X
30. Ideal for #29	X		
31. Actual Male general Rural (remote)	X		
32. Ideal for #31			X
33. Actual Female Admin Rural (remote)			
34. Ideal for #33			

Sorts that loaded on more than one factor: 3, 4, 6, 7, 8, 15, 18, 21, 22, 24, 26, 33, 34
Sorts that were non-significant with this solution: 9, 13

The factor scores for the three-factor solution were used to determine the z-scores for all items in each factor. The ordering of the z-scores in descending order allows the representation of the theoretical array for each of the three factors. Each of these arrays was interpreted to respond to the research questions for this study.

What are the predominant beliefs related to teaching practices for students who are gifted and talented?

There were three factors that emerged from this study to represent the beliefs of teachers for developing curriculum for students who are gifted. The beliefs are named (1) Differentiating According to Student Academic Needs, (2) Differentiating According to Teaching Practices, and (3) Differentiating According to Process Ideas. These are the three theoretical arrays or beliefs held by the teachers who participated in the study. A description of the educators who significantly defined each of these theoretical arrays is essential to the interpretation of the factor. Indeed, understanding the characteristics of those who defined the factor served as data in factor interpretation. The following is a summary description of the teachers who defined the factor and the theoretical interpretation of the factor.

Differentiating According to Student Academic Needs

There were seven (7) sorts that significantly loaded on this factor representing views that teachers held (see Table 2). The actual and ideal sorts for one participant who is female and teaching gifted students in a rural district defined this factor. In addition, the actual sort for two other female gifted teachers (one rural and remote; one urban) and one male general educator from a rural remote district loaded on this factor. Ideal sorts loaded on the factor from a female gifted teacher from an urban district and a male general teacher from a rural district.

The teachers on this factor highly valued the academic needs of students. The statements describing the belief reveal a motivation to differentiate learning and evaluation for each student.

21. Different learning objectives and evaluation standards are set for different students based on the student's ability. (z-score 1.878)
43. Students are compacted out of content that they already know. (z-score 1.746)
39. Variable pacing for students is used based on the students' effort and ability. (z-score 1.52)
37. Student learning differences are varied, and modifications to accommodate for those differences should be made in the classroom (z-score 1.367)
22. Grading expectations for students are varied (z-score 1.358)

Lowest ranked statements are:

13. The more students practice the more they will learn (z-score –1.797)
7. The academic pace of the classroom is consistent for all students (z-score –1.616)
20. Gifted students are given more assignments/items to do than other students (z-score –1.571)
12. Grading criteria is consistent for all students (z-score –1.475)
30. Students will succeed because of a formal and rule-governed classroom environment (z-score –1.469)

Differentiating According to Teacher Practices

There were six (6) sorts that significantly loaded on this factor or six teacher's views that defined the theoretical array (see Table 2). The actual and ideal sorts for one participant who is female and teaching gifted students in a rural district defined this factor. In addition, the actual sort for two other female teachers, both from rural and remote school districts. One of the women was a GT teacher and one was teaching general education. Ideal sorts loaded on the factor were a female GT teacher from an urban inner city district and a male general teacher from a rural remote district.

The educators holding this belief are characterized by allowing certain teaching practices to provide for the needs of gifted students. Students are not expected to sit quietly, but can do other puzzles and assignments if they finish their work early. The teacher plans cooperative learning strategies and accommodates the interests of the students. Although the negative valenced z-scores indicate this educator does not have a teacher-directed classroom, the teacher is making many of the instructional decision. The teacher directs the classroom with the student interests and work pace considered. The highest ranked statements are as follows:

32. Students are not expected to always be sitting quietly at their desks/tables (z-score 1.671)
27. If students finish their work early, they may read, do puzzles, work on other assignments, or work on the computer (z-score 1.639)
47. Opportunities for cooperative and group work are provided for all students (z-score 1.538)
29. Gifted students are encouraged to ask questions that may extend the focus of the planned discussion (z-score 1.451)
36. Planned lessons and activities are modified based on the spontaneous interests and questions of students (z-score 1.299)

Lowest ranked statements are:

5. Lecturing is the best teaching method (z-score –2.071)
10. The classroom is teacher-oriented (z-score –1.834)
30. Students will succeed because of a formal and rule-governed classroom (z-score –1.754)
20. Gifted students are given more assignments/items to do than other students (z-score –1.635)
4. Gifted education services are a privilege to those students who qualify to receive them (z-score –1.550)

Differentiated According to Student Practices

There were six (6) sorts that significantly loaded on this factor or six teacher's views that defined the theoretical array (see Table 2). The actual and ideal sorts for two participants who are females and defined this factor. Of the two teachers whose actuall and ideal defined this factor, one was rural remote and one was urban inner city. The rural remote teacher was a general educator and the urban inner city teacher was a GT teacher. In addition, the actual sort for a male teacher from a rural district in general education and the ideal sort for a male teacher from an urban inner city district from general education defined this belief.

Teachers whose Q-sorts loaded on this factor were those who believed that lessons could be taught to meet the needs of gifted students. Critical and creative thinking skills are built into all lessons. Students were afforded the opportunities if they wanted to take advantage of the skill development they need. The placement of the items that this group felt strongly did not reflect their belief were highly standardized classes (lecturing with grading and assignments identical for all students). This indicates a strong belief that students can make the choices to get the education they need in their classrooms. Students can choose to delve as deeply in the content as they need without just doing puzzles and games to occupy their time. The statements to support this interpretation are listed. The strong positive z-score statements are:

26. Gifted students are given opportunities to develop and practice creative problem solving, critical thinking, and research skills (z-score 1.729)
42. Opportunities for students to actively practice critical thinking and creative problem solving skills are built in to all lessons (z-score 1.664)
41. Students are given situations that encourage them to experiment, explore, and solve problems on their own. (z-score 1.566)
39. Variable pacing for students is used based on the students' effort and ability (z-score 1.512)
1. Gifted students are expected to be able to challenge themselves and learn at their own pace (z-score1.413)

The lowest ranking statements are:

10. The classroom is teacher oriented. (z-score –2.141)
5. Lecturing is the best teaching method. (z-score –2.002)
27. If students finish their work early, they may read, do puzzles, work on other assignments, or work on the computer. (z-score –1.530)
7. The academic pace of the classroom is consistent for all students. (z-score –1.509)
8. Grading expectations are consistent for all students. (z-score –1.355)

Conclusions

The Student Academic Needs group places differentiated curriculum at the curricular level; whereas, the Teacher Practices group appears to focus on the teacher planning for students needs and the Student Practices group focuses on what students can reap from a common curriculum with minimal teacher intervention. Student Academic Needs group reveals an active role to identification and planned responses to meet the needs of gifted; whereas, the other beliefs believe that gifted students can participant at their own level in a curriculum designed for all students. None of the educators believe that more work or rigid classrooms are appropriate for gifted students.

The results of this research offers educational practitioners insights related to planning and developing curriculum for gifted students. Results of this study may further assist decision makers in career development (Tomlinson, Tomchin & Callahan, 1994)., higher education, and school administration regarding professional development. It appears that a renewed interest in meeting the needs of gifted students exists in rural and urban areas, but the approach to accomplish such goal remains varied.

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THE USE OF NONVERBAL INTELLIGENCE TESTS IN IDENTIFYING CULTURALLY DIVERSE, POTENTIALLY GIFTED STUDENTS

This study provides an overview of three nonverbal intelligence measures: The Culture Fair Intelligence Test (CFIT), the Raven's Standard Progressive Matrices, and the Naglieri Nonverbal Abilities Test (NNAT)in identifying culturally diverse, potentially gifted students from a rural area. Results indicate that such instruments may provide important information for the identification process of these students.

Children and youth from culturally diverse, rural areas have been underrepresented in programs for gifted students. The cognitive characteristics of gifted students from such environments contributes to this underrepresentation. Regular classroom teachers, teachers of the gifted, and school administrators will be interested in information relating to a study that was conducted to investigate the use of three nonverbal intelligence measures in identifying culturally diverse, potentially gifted students from a rural area in a southern state.

The Culture-Fair Intelligence Test, the Raven's Standard Progressive Matrices, and the Naglieri Nonverbal Abilities Test were administered to 189 students enrolled in grades three through eight at a rural elementary school. Participants included: 176 (91%) African-American students and 13 (8%) Caucasian students. All students in grades three through eight were tested (Grade 3, *n=38;* Grade 4 *n=38;* Grade 5 n=25; Grade *6 n=32;* Grade 7 n=31; Grade 8 *n=26).* In addition, all 189 students were participating in free or reduced-priced lunch programs.

. The Raven's Standard Progressive Matrices is a non-verbal untimed test that measures higher level thinking skills(Raven, Court, and Raven, 1996). The test consists of 60 items divided into five Sets (A,B,C,D, and E), each containing 12 items, with each item becoming progressively more difficult. It is relatively easy to administer and score, and as of 1990, new norms for the Raven's Standard Progressive Matrices are available on a variety of populations, including African-Americans, Hispanic, and Navajo.

The Culture Fair Intelligence Test measures individual intelligence while reducing the influence of verbal fluency, cultural climate, and educational level (Cattell and Cattell, *1965).* The test can be individually or group administered with each scale containing four subtests involving various perceptual tasks. The Culture Fair Intelligence Test is a valid and reliable instrument.

The Naglieri Nonverbal Ability Test is a brief, culture-fair, nonverbal measure of school ability (Naglieri, 1996). Students must rely on reasoning and problem-solving skills rather than verbal skills. Items were chosen to assure fairness across sex, race, and ethnicity. The test is divided into seven levels: Level A for Kindergarten, Level B for Grade 1, Level C for Grade 2, Level D for Grades 3-4, Level F for Grades *5-6.* Level F for Grades 7,8,9, and Level G for Grades 10,11,12. Each level contains 38 items.

All tests were group administered. Statistical procedures used for the data analysis were SPSS-X for Windows Version 8.0 (1998), subprograms for Descriptive Statistics, Frequencies, and Pearson

Correlation Coefficients.

The Pearson correlation coefficients were moderate, ranging from .48 to .64, excluding those among the subscales of the Naglieri Non-Verbal Abilities Test. Statistically, each of the coefficients generated was significant at the .01 level. Descriptive statistics are reported in Table 1 using the IQ scores obtained from the CFIT, Age Index Scores from the NNAT, and z scores from the Ravens. The standard score or z-scores for the Raven's Progressive Matrices were obtained by subtracting the mean from each raw score and dividing by the standard deviation as suggested by Norusis (1998).

Table 1
Descriptive Statistics

Instrument	N	Min	Max	Mean	Std Dev
CFIT IQ	159	57	132	92.3	13.9
NNAT Age Index	166	50	138	85.3	15.4
Ravens z-score	160	-2.59	2.36	.008	1.0

Although the total number of students tested was 189, due to absences, the total number of students administered all three instrument is less than 189. In order to identify a pool of high-scoring students, the scores were categorized into 5-point ranges beginning at the 80th percentile. These data are reported in Table 2. It should be noted that the total number of scores at the 80th percentile or higher was 39; however, the scores were actually obtained from only 26 different students. Compared with the Culture Fair Intelligence Test and the Naglieri Non-Verbal Abilities Test, the scores on the Raven's Progressive Matrices identified the highest number (15) of students scoring at the 80th percentile or higher.

Table 2
Percentiles by Range

Instruments	Ranges								
	80--84		85--59		90--94		95--99		Total
	n	%	n	%	n	%	n	%	n
CFIT percentile	1	0	2	0	3	1	2	0	8
NNAT age percentile	2	0			1	0	3	1	6
NAAT grade percentile	3	1	1	0	2	0	4	2	10
Ravens percentile	4	2	1	0	7	4	3	1	15
Total	10		4		13		12		39

These instruments together, identified 26 students who merit additional testing. As previously mentioned, the Raven's identified 15, but 11 more students had high scores on one of the other instruments. Tests used to assess non-verbal intelligence may provide important data for the identification process of these students. Additional studies for similar groups need to be conducted to broaden the research base on the usefulness of these instruments.

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COUNTRY LIVING: BENEFITS AND BARRIERS FOR GIFTED LEARNERS

Gifted and talented children have cognitive and affective characteristics that set them apart from their more typical classmates (Clark, 1997). These characteristics can be particularly problematic when children live in rural areas where stability, traditional values, small schools, and self-sufficiency can be at once a barrier and a support. Limited resources and opportunities for education and career can hinder the full development of potential for many students (Spicker, Southern, & Davis, 1991). The cost of financial and resource limitations for those with gifted abilities is substantial both in life satisfaction and contributions to society.

Characteristics of Gifted Learners

Giftedness is not well understood (Silverman, 1993). Learners who are gifted have unique characteristics that set them apart from others. They learn quickly, have good memories, can use stored information to solve problems, can think in abstract terms at an early age, and are frequently highly verbal. They tend to be supersensitive to actual and implied inequities in treatment of themselves and others, are often unusually idealistic, and may be especially critical of themselves and others (Clark, 1997). Silverman (1993) points out that they demonstrate an „asynchrony" in development between their cognitive, social, emotional, and physical abilities that is not typical. While all children have different levels of skill in these four major domains, the more gifted the child the greater the asynchrony among these skills and the more pronounced the discrepancy with the child's chronological age. It is these unique characteristics that set gifted learners apart from their more typical peers. They are not better or more valuable human beings, they simply have different learning needs, and as such require a differentiated education (Clark, 1997).

Needs of Gifted Learners

Gifted learners need to experience intellectual challenge like other students. They are capable of understanding more advanced, abstract, and complex ideas than their more typical peers, and can accomplish this in a shorter amount of time. They need to work at the appropriate difficulty level for them so they develop appropriate study habits, otherwise life-long underachievement might ensue. The lack of challenge gifted learners frequently experience in school may inadvertently teach them that learning does not require work when you are bright. It is not unusual for gifted learners to waste large portions of time waiting for their classmates to learn what they already know, or what they learned with minimal practice. They do not develop a realistic understanding of their talents without some comparison with other high ability learners. Therefore, they need to spend time with intellectual peers for at least part of the day (Clark, 1997). Gifted learners need less structure in their learning environment; indeed, they prefer it. Thus, while they should not be left to teach themselves, they need less direct instruction and frequently benefit from independent learning opportunities (Gallagher & Gallagher, 1994). They also need to learn about themselves, including the characteristics of giftedness that set them apart from other children, so they can learn to accept themselves and channel their strengths appropriately. Finally, they need caring adults who will facilitate their learning, provide guidance when needed, and create a safe environment in which gifted learners can grow and develop their talents without fear of ridicule (Silverman, 1993).

Identification

Rural students as a group have different educational and life experiences when compared with their peers in the suburbs or city. Whether they are identified by the usual checklists and standardized tests may be a function of how well they are acculturated to the urban/suburban values and experiences. Children who have only occasionally been to a town with a population of perhaps a thousand have no idea what a city is like. Yet standardized tests are based on familiarity with everyday life in urban areas. This bias can lower test scores and limit opportunities for rural children regardless of culture (Spicker et al., 1991).

Students who differ from the more typical population in culture, language, life experiences, or physical or emotional health are not as readily identified as gifted. Because the characteristics that are typically used to identify students as gifted learners are not manifested in the same ways in diverse populations as in the "mainstream" culture, these children frequently remain unchallenged and may continue underachieving through school (Seeley, 1993). Socioeconomic status and gender can cut across all other characteristics and strongly influence whether a child's gifted abilities are recognized. Expectations play an important role. Few gifted children are located when neither they nor their elders think there can be high ability learners in certain schools, communities, or cultures. As Spicker et al. (1991) point out, poverty is an on-going problem for many families living in rural areas, and it is poverty rather than ethnic diversity that limits opportunities for children. Who would expect to identify potentially gifted learners in populations of children with the following characteristics?

- a deficiency in language skills,
- lack of perceptual skill development in language differentiation,
- lack of stimulation for asking or answering questions,
- lack of enrichment activities,
- lack of concern over school attendance,
- lack of curiosity due to paucity of objects in the home,
- lack of support by parents of the school establishment,
- lack of parental understanding of the educative process,
- lack of quiet time for fostering discriminatory listening skills,
- lack of self-confidence,
- lack of time consciousness, and
- lack of vocabulary related to the school establishment.

(Michael & Dodson, 1978, as cited in Spicker et al., 1991, p. 93)

Identification and appropriate instruction for females of all ages are also influenced by stereotypical expectations. As girls grow and mature, they tend to be socialized into hiding their abilities. They may be assertive as young children, but they learn to please others. Being assertive in demonstrating and acquiring learning is not socially acceptable for many girls (Silverman, 1993). The unfortunate result is that they may not appear gifted to parents or teachers. Girls tend to score lower than boys on standardized tests of achievement throughout school. The difference between the performances of boys and girls is even more pronounced at the very highest levels of the tests; very few girls achieve top scores even when they receive A+'s in school. The result is they are less likely than boys to be identified for gifted programs, scholarships, or special programs (Sadker & Sadker, 1994). As a result, their self-esteem and achievement suffer. Fewer women than men are seen as gifted based on adult production (Silverman, 1993). Girls who live in rural environments are even more likely to experience social pressure to behave in traditional ways because that is the cultural norm for everyone. Kleinsasser (1988) points out that the act of labeling girls puts them in a stressful position for which they will need adult support. On the one hand they are expected to excel and pursue higher education and professional careers; on the other, they are reminded daily that the traditional role of women is to maintain a home and raise a family. While reform movements in more populous areas of the country are addressing the needs of girls, no such plans are being developed in rural areas (American Association of University Women & Cohen, 1996).

Effective identification occurs when teachers are well informed about the characteristics of gifted learners and the assessment procedures are selected to show students at their best. Providing frequent, quality staff development for teachers, counselors, administrators, and staff is a must. Not only is it important these individuals understand the characteristics and needs of gifted learners, they must understand biases and prejudices that are inherent in the assessment process and how to avoid them. Students who do not "fit" the typical picture of a gifted child will not even make the first screening. Identification procedures must be selected that are not biased against children with rural experiences. That suggests nontraditional approaches for screening and selection, such as employing untimed and nonverbal intelligence tests, examining anecdotal evidence from teachers and parents, looking for evidence of problem solving outside tests (Spicker et al., 1991), evaluating student interests and products from inside and outside the school (Seeley, 1993), and possibly including curriculum-based assessments (Joyce & Wolking, 1988).

Pitts (1986) cautions to "be aware that the identification procedure is particularly delicate and critical in a small town" (p. 24). Criteria for selection should be described in writing in the school policies and made available to the public. A blind review of the data on each child should be conducted by a multidisciplinary committee (Pitts, 1986). These procedures along with a set policy for handling grievances can go a long way towards avoiding accusations of favoritism that could quickly kill a gifted program.

Barriers and Benefits of Rural Communities

Identifying gifted students and providing them with an appropriately differentiated curriculum is a challenge in any community; it is even more difficult in rural areas. Even the term "rural" adds to the dilemma, for its definition can mask critical issues. "The key to definition is not in numbers but in relationships between people and between people and the land" (Mathews, 1982, as cited in Spicker et al., 1991, p. 93). The people hold traditional values and belief in small schools offering free public education under local control (Spicker et al., 1991). Local control may mean one small school with only two or three students. Sometimes these small schools may affiliate with a larger school to share resources. Spicker et al. point out that financial and other resources are limited because small, rural communities typically have a limited tax base, schools offer fewer courses, counselors and educational specialists may not be available on a regular basis, and program options for special populations may be limited. Local educators may be in serious need of training to work knowledgeably and effectively with gifted learners (Ert & Wolf, 1996).

Not only are resources thinly stretched, there are few gifted children per grade. In a K- 12 school of 200, not many gifted learners will be found at any grade level making grouping arrangements more problematic. Yet grouping high ability peers for instruction is strongly recommended by authorities in gifted (e.g., Clark, 1997). Who will provide the instruction when teachers and administrators may already have multiple assignments, not all in areas of expertise? When and where will instruction be carried out when additional time and space may be at a premium? How will coherent and defensible services be developed for K-12 gifted children when there may be only 10-15 gifted learners among all the grades (Spicker et al., 1991)? Even if teachers and administrators believe these children need more challenge and rigor, how they will make this happen is exacerbated by limited resources. This is where creativity and resourcefulness can turn many of the behaviors that build barriers into assets to counteract the unavoidable challenges of rural life styles.

One of the strengths of rural communities comes from its traditional shared values and stability, and sense of community (Ert & Wolf, 1996). These characteristics, however, can discourage offering services for gifted learners that might be perceived as special privileges (Jones & Southern, 1992). Teachers or parents may be viewed with suspicion when they begin advocating for special instruction for gifted learners. What makes them an "expert?" When only a few students would benefit from advanced learning experiences in any community, the need seems less important; the small numbers in rural schools may appear even less significant. The habit of self-sufficiency in many aspects of daily life can discourage local school officials from asking for advise from outside experts (Spicker et al., 199 1) or teachers from asking for help individualizing instruction for one or two students.

Pitts (1986) recommends starting small with gifted programming and letting success build community pride. Advance planning (Pitts, 1986) and "continuous and assertive leadership" are necessary to overcome barriers to the creation of quality programs (Clark, 1997, p. 223). Rural schools should not try to duplicate service options developed for more populous areas (Pitts, 1986; Ert & Wolf, 1996). Innovative use of local resources can help compensate for limited choices and capitalize on native self-sufficiency. Basic traditions and community stability can be maintained not only by staying the same, but also by educating the next generation well so they can develop the skills necessary to solve difficult problems that may threaten their way of life in the future. Changing the status quo is not easy, and the impetus needs to come from within. If school and town leaders unite, they can help the community recognize the advantages that can accrue from providing sufficiently challenging learning opportunities for every student. Emphasis on collaboration is critical to success (Ert & Wolf, 1996).

Delivery of the advanced instruction needed by gifted learners may even require cooperative agreements with neighboring communities, such as pooling material and human resources. With strong leadership, town members might be encouraged to focus their sense of pride on their contributions to a consortium of schools that can enhance learning through shared resources. For example, mobile enrichment vans (Clark, 1997) can transport science equipment, libraries, and other resources across district lines to out-lying schools. Some communities even combine the public and school libraries and computers on school property, providing an outside access for town members.

Rural schools have some distinct advantages. Their small class size can make it easier to individualize despite limited resources since more teacher contact time is available for all students. Cross-age grouping may be necessary so gifted learners can have instructional time with ability peers. This could be accomplished with less concern for potential detrimental effects of wide age spans because fewer students allow for more effective monitoring and small community size increases the likelihood that faculty know the students and their families. Working together for the good of the group, community members can provide the next generation of potential local experts with a nurturing environment and challenging studies.

Programming strategies

Differentiation of the regular curriculum is a necessity for all gifted learners (VanTasselBaska, 1994). The challenge in rural areas is to also keep in mind the unique characteristics of the communities. Maker (1982) recommends that teachers turn learners' strengths into needs and then strive to meet their needs. For gifted learners, a strength should be viewed as a need for differentiated instruction to enhance individual skills. Strategies for providing this instruction may have to be modified because 1) few children may need enhanced learning opportunities, 2) fewer financial resources are available, 3) teachers and administrators may already be teaching in several areas, and 4) fewer curricular and support materials may be available (Spicker et a]., 1991).

Despite limited resources, individualization is easier in small rural schools because they have a family atmosphere and class size is small. Sharing resources and making use of technology can help schools provide the variety of instructional options needed by gifted learners (Spicker et al., 199 1). Methods for grouping and delivering instruction need to be tailored to take full advantage of community strengths, interests, and resources, and not try to follow models that were developed for large urban or suburban schools (Bull, 1987). Strategies such as curriculum compacting (see Reis & Renzulli, 1992) and tiered assignments (see Coleman, 1996) are but two ways to differentiate that are easy to manage with small numbers of students. With the Internet, world resources such as art galleries, museums, zoos, concerts, libraries, scientific research, and exploration of Earth and space are as close as the user's fingertips. While on-line adventures are not equivalent to real experiences, it does help compensate for some of the limitations found in rural areas. In addition, email and listserves can provide networking, interaction, and support for students, parents, and teachers who would otherwise be isolated (Lewis, 1998). Class discussions can be conducted via email, or closed chat rooms linking students from distant communities in meaningful collaboration in areas of interest. Videotapes of class projects and discussions can be mailed to cooperating classes from schools beyond the boundaries of the immediate town (Bull, 1987). Interactive distant learning technology is becoming increasingly available in schools and community colleges. It can be employed to develop and connect learning groups between schools dispersed over a wide area or across district or even state and national lines. (See Bull, 1987 for additional examples of program and instruction options viewed from a rural perspective).

Students need challenging and meaningful ways to use the time they "buy" when already - mastered material is compacted. Gifted students need someone to structure, monitor, and teach independent study skills so they can learn to apply them. Teachers should make sure gifted learners are working at a sufficiently rigorous level, while at the same time providing the environmental support necessary for them to risk tackling highly challenging materials and tasks. Enrichment clusters, whether single-age or cross-age grouped offer an attractive option for independent study of meaningful problems (see Renzulli, 1999). Mentorships are a particularly useful method of providing individualized experiences and training for secondary level students. While the diversity of experts found in urban areas is not usually available in rural communities, experts can be found that apply content area skills in ways that are relevant for their community. In addition, mentors in distant locations can be accessed using the phone (Bull, 1987), email, or the net meeting component of Web browser software. Gifted high school students can mentor their younger gifted peers, strengthening the family environment often found in small schools and sharing knowledge and skills that could be mutually beneficial.

Each community and each school is unique. It is important to look at the positives and strive to enhance them, rather than focusing on barriers. Jones and Southern (1992) found that teacher and coordinator training increased the positive attitudes towards various programming options for gifted learners. Individuals from inside or outside the community who are providing staff development and support need to be sensitive to the cares and concerns of not only parents and educators, but also the various institutions within the community. Services for gifted learners need to be tailored to suit the unique environments in which they live while at the same time offering sufficiently challenging opportunities to develop student strengths (Ert & Wolf, 1996). A coherent program of services will take time to develop and will require continual monitoring and adjustment to ensure that it continues to meet student and community needs.

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RURAL HISPANIC CHILDREN AND GIFTEDNESS: WHY THE DIFFICULTY IN IDENTIFICATION?

Juan is a bright nine-year-old Hispanic student. He was retained in second grade and referred for special education services in the rural community in which he lives. His lack of proficiency in English has interfered with his learning to read. Juan is a very creative thinker, always offering unique and divergent solutions to problems. He was not identified for his school's gifted program because his scores on I.Q. and achievement tests were low.

This story is not unusual for students from culturally diverse, low-income backgrounds who live in rural schools. Data from several research studies show that gifted and talented programs frequently underserve disadvantaged minority children. Our educational system often penalizes children who are raised with significantly different values and attitudes from those found in the dominant culture (Clark, 1988). This paper will focus on the Hispanic population since, as Chamber, Barron, and Sprecher (1980) pointed out, such students appear to be receiving the least support from the present assessment procedures. Problems will be explored relating to services provided for gifted children in rural schools, appropriate tools for identification, and social-emotional problems of this special population.

DEFINITION OF TERMS

Masten (1985) says that an understanding of giftedness and bias are necessary in a discussion of assessment of gifted minority students. The United States Office of Education legislated the following definition of giftedness:

> Gifted and talented are those identified by professionally qualified persons, who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by "regular school programs" in order to realize their contributions to self and society. These are children with "demonstrated" and/or "potential" high performance in the following areas: (a) general intellectual ability; (b) specific academic aptitude; (c) creative or productive thinking; (d) leadership ability; and (e) psychomotor ability.

This definition is widely used. As Richert (1985) says, there are several advantages to using the federal definition. It does have the legitimacy of national law behind it. It is also comprehensive in order to be applicable in many settings.

In the literature on the assessment of gifted minorities, the term "bias" is frequently used, but rarely defined. Masten (1985) identifies these two accepted definitions of bias:

(1) Constant or systematic error as opposed to chance error.
(2) In mathematical statistics, bias refers to a systematic under- or over-estimation of a population parameter by a statistic based upon samples drawn from the population.

Areas of potential bias as summarized by Reynolds (1982) include inappropriate test content, inappropriate standardization samples, examiner and language bias, inequitable social consequences, measurement of different constructs, and differential predictive validity. Attempts to deal with perceived test bias produce supposedly "culture-fair" and "culture-free" tests. Culture fair tests do not exist because culture influences all environmental contacts and, therefore, test performance. Because tests favor individuals from the same culture in which they were developed, there are no culture-free tests either (Anastasi, 1982).

Sisk (1987) clarifies other important terms mentioned in this paper. "Culturally diverse" means that students are members of a culture significantly different in values, attitudes, and practices from the majority culture. Sometimes these children are also disadvantaged, which means being poor or being a member of the lower socioeconomic classes.

PROBLEM IN PERSPECTIVE

The United States takes pride in having a great variety of nationalities, ethnic, and racial groups. Our laws ensure the equality of these groups. However, many of these people are thought of as inferior, when actually they are only different. We have a long way to go in meeting the needs of these groups. Although several studies have examined the educational needs of Hispanic children, few have focused on the distinctive issue of Hispanic performance on rural communities (Hampton, Ekboir, Rochin, 1995). Since two-thirds of America's school districts and one third of the nation's children are rural (Helge, 1992), this population deserves to be examined.

Richert (1985) says that while most states formally subscribe to the comprehensive federal definition of giftedness, in practice, local districts tend to seek and find white, middle-class academic achievers. Figures published by the United States Department of Education's Office of Civil Rights in 1972 revealed that minority groups are under-represented by 30-70% in gifted programs throughout the nation (and over-represented by 40-50% in special education programs). Underachieving, poor and minority gifted children who most need programs to develop their potential are consistently under-represented. Exum and Colangelo (1986) explain that gifted students of culturally diverse backgrounds do have meaningfully different needs from other gifted youngsters. If these needs are not recognized, then appropriate educational programming is seriously hampered. Van Tassell-Baska and Willis (1987) state that needs of minority and economically deprived students have been sorely neglected in American schools. Bruch (1978) analyzed the literature on special programs for minority gifted populations by ethnic group and found only eighteen programs in the United States operative prior to high school. In rural communities, the problem is only compounded. Rochin and Castillo (cited in Hampton, Ekboir, & Rochin,1995) documented several demographic transformations sweeping rural communities. The Hispanic population grew in absolute and relative terms. The Hispanic presence ranged from less than 1% to 23% of population in 1950 and from 15% to 98% in these same communities in 1980. In 1980, 49 of these communities had a majority of Hispanics. By 1990, 68 of these communities contained majority Hispanic population. With this population growing at such a rate, schools need to examine how they identify such students for their gifted and talented programs.

IDENTIFICATION

Baldwin (1985) believes that one perspective on the problems associated with identifying and nurturing minority gifted children is that the research and literature on minorities has been focused more on deficits than on strengths. He also admits that identifying gifted children from minority groups has posed one of the most challenging problems in the education of the gifted. As larger public schools across the country have geared up to accept the challenge of providing services to these students, they have often developed solutions that are impossible or impractical for rural areas to adopt.

In 1982, the National Report on Identification (Richert, Alvino, & McDonnel, 1982) revealed a great deal of confusion about defining, identifying, and determining which populations should be served in gifted programs. Some of the problems cited in the report follow:

1. There is confusion about the definition of giftedness because of its vagueness.
2. Educational equity is being violated in the identification of significant subpopulations. Tests are used for populations for which they have not been normed. Various minority groups are excluded systematically from gifted programs as a result of biased procedures.
3. Identification instruments are being misused. Tests are being used to measure abilities which they are not designed to determine. For example, achievement, aptitude, and I.Q. tests are used almost interchangeably, thereby confusing specific aptitudes and general intellectual ability. Achievement measures and I.Q. tests are also being used inappropriately to identify creativity and leadership.
4. Instruments and procedures are being used at inappropriate stages of the identification process. Diagnosis is not the purpose of initial screening procedures; however, use of these tests for screening is common. Such tests are useful only for considering placement in a particular course or measuring progress.

The controversy centers on whether I.Q. by itself can designate or identify giftedness, whether broader or diverse definitions of discrete abilities are more appropriate, or if characteristics beyond the cognitive are necessary or more relevant. Researchers also point out that most writers in the field of cognitive science as well as in the education of the gifted have been working to expand concepts of giftedness beyond I.Q., thereby, reducing one major gifted obstacle in identifying Hispanic students who live in rural schools. (Richert, 1987).

OBSTACLES TO IDENTIFICATION

deBernard (1985) points out that historically, Hispanic bilingual children in the United States have demonstrated a lower rate of achievement than their Anglo-American counterparts on English standardized reading tests. In many areas, these scores are used as a major criterion for placement in gifted programs. Children who speak little or no English, naturally, cannot do well on these tests; however, the most intriguing problem concerns the reading achievement of those Hispanic children who demonstrate well-developed English vocabularies and often impress teachers with their ability to translate instructions to new arrivals. Mace-Matluck and Dominguez (1981) found that these same children who are apparently proficient in English and often far above average in classroom performance, score lower than expected on reading tests.

Although such concerns have encompassed all schools, less attention has been paid to the problems of providing quality educational services to rural students than to urban students. This urban-rural imbalance has occurred despite data suggesting that rural students are more at risk for academic and behavioral problems than urban and suburban students (Helge cited in Huebner & Wise, 1992).

Bernal (1981) also sees that bilingual students have to work harder and perform better than their majority peers in order to reach approximate performance levels. Gallagher (1985) says that performance on an I.Q. test is determined, to some extent, by past opportunity and experience. Diaz

(1998) found that absence of early experiences thwarts students' possibilities of developing high abilities later in life. This is what makes it difficult to use I.Q. information in evaluating the intellectual capabilities of the youngsters who come from different home and cultural backgrounds. Baldwin (1985) lists the main factors affecting our success in identifying gifted minority children.

1. Parents who cannot speak English and thus cannot converse with their children may be unable to foster English language skills.
2. A lack of conversation in the home may deny children the opportunity to learn the art of dialogue.
3. Cultural attitudes that emphasize having respect for elders may make minority children appear to be cowardly and backward.
4. The traditions of the minority group may supersede the commonly accepted practices of the majority, leading to misconceptions about the abilities of children.
5. An environment that is focused on survival may force children to accept mature responsibilities in order to satisfy immediate needs rather than to pursue education.
6. Standard, out of school experiences such as visiting museums, libraries, and zoos may be limited for minorities.
7. Prejudices against minorities that may exist in the community may have a negative effect upon minority members' self-concepts.
8. Minority children's use of their native language, which may be rich in imagery, may interfere with their learning the precise vocabulary of standard school language.

Bernal (1981) states that even when home and school share the same values, gifted and talented bilingual students may not readily gain recognition, leading to identification and nurturance by the public schools, for they must overcome language as well as cultural barriers before they may demonstrate high intellectual potentials and specific academic aptitudes.

DeLeon and Argus-Calvo (1997) provide evidence to support that although giftedness can manifest itself in many ways, few gifted programs have been established in nonacademic areas, especially in rural settings. They feel that education in other areas is not only intrinsically valuable but also supports student persistence and achievement. The difficulty for meeting needs of gifted Hispanic students in rural schools lies mainly in finding appropriate tools for identification.

APPROPRIATE TOOLS FOR IDENTIFICATION

Richert (1987) and DeLeon et. al. (1997) suggest a variety of practices for ensuring that the disadvantaged culturally gifted have increased access to the services they need. Several practices are useful at more than one stage of identification: nomination into a pool by teacher, parent, or self, assessment for placement in a specific program option, evaluation of identification once students are placed in a program option. Richert (1985) and other researchers believe that identification procedures must reflect current research and eliminate inequity by using a multidimensional approach to identification (Hartley & Wasson, 1989). Giftedness has many dimensions: abilities, personality factors, and environment. In assessing abilities, it is essential to understand that each instrument or procedure measures only one of many facets. Measures that go beyond academic achievement must be used to find students whose abilities are not indicated by tests and school performance. Informal and formal data must be used. Richert (1985) says both formal and informal procedures are necessary to avoid test bias and to include all gifted students in need of special programming.

Masten (1985) believes that gifted assessment needs to be a continuous process and not limited to a single test administration. He identifies some research-based approaches to identify gifted minority students. For Hispanic children, researchers advise using the WISC, Cartoon Conservation Scale, Torrance Tests of Creative Thinking, and the System of Multicultural Pluralistic Assessment (Masten, 1985, Spiker & Aamidor, 1996).

School districts have an option when using a test that has cultural bias. They can norm for each subpopulation. The procedure is to take the same percent top scoring students from each subpopulation as from among advantaged students so that representative numbers of disadvantaged and advantaged students are identified (Richert, 1985).

Baldwin (1985) suggests that recommendations of teachers and peers would be a good instrument with which to identify gifted minority students. Interviews would also be helpful. A product portfolio would be another informal kind of tool to use for identification. This would include the child's special projects that could be rated on a creativity scale. Educational adaptations made in an ongoing manner are feasible modifications for teachers in rural schools to make.

EDUCATIONAL ADAPTATIONS FOR THE GIFTED HISPANIC STUDENT

Gallagher (1985) says the important issue for educators is how to make meaningful adaptations for culturally diverse gifted students. Three major types of adaptations have been suggested: counseling, the building of self-knowledge, and the development of some meaningful curriculum adaptations.

Students caught between competing cultures need special attention. Culturally diverse students are caught between the need to express their talents and the need to adhere to family patterns and values. It is strongly suggested that counselors become immersed in and familiar with the cultural background and values of minority groups to help them deal with this problem.

One of the dimensions that gifted children from culturally diverse backgrounds share with one another is a degree of discomfort with the use of verbal symbols. Therefore, specialized programmatic efforts need to be designed with that understanding in mind. Expression of feelings through theater and related arts works well.

There are a number of opportunities for some minor changes in existing curricula which could make the material more relevant and interesting to the culturally diverse student. Development of curricula and teaching strategies that facilitate the sharing of cultural or racial experiences with children from other backgrounds could emphasize the importance of each group.

Colangelo and Zaffrann (1979) have made these suggestions for parents, counselors, and teachers who wish to work successfully with culturally diverse gifted learners:

1. Use mentors to tutor culturally diverse students.
2. Help them to develop questioning attitudes.
3. Help them understand and explore the problems they may face as they try to align their cultural values with those of the dominant culture and as they try to develop their own individuality.
4. Help them cope with peer pressures not to succeed, when they exist.
5. Help them to remediate any areas of skill that are lacking.
6. Give them opportunities to explore a variety of career options.

CONCLUSIONS

Many culturally disadvantaged Hispanic students in rural communities can be or are gifted. If we will give them a chance to achieve and believe in themselves, they may someday make great contributions to our society. They can only do this if we adequately identify and service their areas of giftedness. Data indicates that not enough Hispanic children in rural or urban areas are being identified for gifted programs. This should raise questions in our minds as to the accuracy of the tests we are using for placing children in these programs. We must be concerned that educational opportunities are provided to all students. After all, the United States boasts that we are a "melting pot." The question this paper proposes with regard to that statement is, "Are we trying to actually melt children so only the elite fit into our nice neat 'pot'?"

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LEADERSHIP AND POLICY ISSUES

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MENTORING: A COLLEGIAL PARTNERSHIP

Introduction

Generally, neophyte teachers who work with a mentor or maintained continuous contact with other first-year teachers appreciate support (DePaul, 1998). This kind of support may determine whether the rural special educator continues working in the profession. Consideration of this is vital, as the number of new personnel in special education has been declining while the number of students in special education has increased (Bowen, & Klass, 1994). In addition, rural teachers are more likely to leave professional education than nonrural teachers (Stern, 1994).

Although many school districts sustain mentoring programs, they tend to be located in large, suburban or urban locales. The opportunity for such programs in rural and remote schools may not exist. The rural district, strapped for personnel and resources, has a dilemma. For example, many small and rural school districts, including the numerous one-room schools, exist in the panhandle of Nebraska, an area of approximately 41,000 square miles. For this type of district, a regional, college-based mentoring program may be part of the solution for teacher mentoring. Such a close working relationship between local education agencies and teacher preparation programs would benefit these new practitioners (Bowen, & Stearn, 1992).

The School of Education at Chadron State College (Chadron, Nebraska) has a mentoring program for novice teachers, the Entry Year Assistance Program (EYAP). The School of Education assigned a coordinator to establish links to Panhandle school administrators to offer support for the beginning teacher. This paper focuses on EYAP.

Rural focus

"Geographical isolation" is the term one applies to Nebraska's Panhandle. Chadron State College is the only four-year, higher-education institution in the western part of Nebraska. The closest higher education institutions relative to Chadron State's position which offer education programs are Black Hills University, Spearfish, SD; the University of Wyoming, Laramie; the University of Northern Colorado, Greeley; and the University of Nebraska at Kearney. The closest major city is Denver, located about 300 miles southwest from Chadron. Lincoln, the capitol, lies 423 miles east. Local mileage alone is remarkable. Chadron to Scottsbluff is 100 miles away; Chadron to Alliance is a 62 mile ride.

Furthermore, within the state of Nebraska one finds 320 Class I school districts (personal communication with Data Department, Nebraska Department of Education, January 8, 1999). These districts are elementary schools for students in kindergarten through 8th grade. Not until 1992 did these one- or two-room school district's autonomous school boards contract for a principal. Since 1992 when the Nebraska Department of Education mandated a part-time principal for the accredited Class I schools, these school boards have contracted with a variety of certified personnel in the region to serve as elementary principals. The principals already are full-time principals in neighboring school districts, full-time college or university faculty, or county superintendents.

On the economic side of the picture, funding for education is an issue. Several states including Nebraska have spending "lids" applied legislatively to the school district budget. The lack of access to resources, both financial and personnel, and professional growth opportunities for teachers is a problem. To further compound the situation, the school administrator is pulled in many directions and doesn't always have the necessary time to assist the beginning teacher. One may question whether part-time principals find time to function as leaders in the management and "operation of the school and the improvement of curriculum and instruction" (Title 92, Nebraska Department of Education, 1996, 6).

Theoretical basis for teacher mentoring

Finding and retaining qualified teachers to instruct in some of our schools is becoming nearly impossible. The retirement of experienced teachers with no new teachers to follow puts school districts at risk. If hired, about 30% of beginning teachers do not continue in the profession beyond the second year; almost 40% of teachers, including academically talented ones, leave teaching within the first five years (Odell and Ferraro, 1992).

To replace the retiring teacher, the school administrator needs to hire competent, talented individuals. The second step is to "help novice teachers develop staying power" (Halford, 1998). Research has shown that one way to retain teachers and offer support for the novice teacher has been through the mentoring process (Halford, 1998; McKenna, 1998; Odell and Ferraro, 1992; Stedman and Stroot, 1998). What happens to the teacher in the first year of the profession "seems to be more positively related to teacher retention than is ...prior academic performance or adequacy of ...preparation programs" (Chapman's study as cited in Odell and Ferraro, 1992).

Mentoring is not a new concept. In the Homeric Odyssey one reads of Telemachus' Mentor, the individual who advised, helped, and guided Odysseus's son (Lasley, 1996). Historic figures such as Socrates and Plato, Freud and Jung have been mentored (Odell, 1990). In more recent times, one reads of mentoring in the business world where mentors guide and sponsor protégés. More specific to the current educational setting are the formal mentoring programs which have existed since the 1970s. Moreover, legislative requirements of many of the states mandate mentoring for the novice teacher. Nebraska is such a state (Title 92, Nebraska Department of Education, 1998).

Mentoring is used to assist new teachers orient themselves to the profession (Hughes, & Ubben, 1994). There appears to be a wide range of interpretation when defining mentoring (Ganser, 1998). Glatthorn (1990) provides a number of staff development guidelines that can be used to insure meaningful support for the neophyte teacher:

1. Recognizing time constraints of new teachers,
2. Promoting consideration of self-identified needs of the teacher,
3. Emphasizing interpersonal experiences,
4. Promoting peer support,
5. Offering the opportunity for new teachers to share their perspective,
6. Considering new teacher expectations,
7. Promoting personal reflection, and
8. Promoting cooperative and constructive interactions.

The literature review for teacher mentoring has revealed consistently similar information. Reality shock (Odell, 1990; Veenman, 1984) sets in quickly; the novice is assigned responsibilities of the veteran teacher (Glickman, Gordon, Ross-Gordon, 1995; Odell, 1990). Entry into the world of teaching is sudden (Feiman-Nemser & Parker, 1993) rather than a gradual transition into the profession with an internship similar to the medical world (Glickman, Gordon, Ross-Gordon, 1995). The novice is thrust into an experience that too often demoralizes the individual. The "sink or swim" concept becomes the norm (Brock & Grady, 1997; Glickman, Gordon, Ross-Gordon, 1995).

Beginning teachers experience isolation (Feiman-Nemser, 1998; Glickman, Gordon, Ross-Gordon, 1995), problems of classroom management especially with special needs students (Wilson, Ireton, Wood, 1997), student assessment concerns and lack of student motivation (Veenman, 1984), parental problems (Wilson, Ireton, Wood, 1997) including communication (Lovette, 1996), and administrative conflicts (Wilson, Ireton, Wood, 1997). In addition, there are those beginning teachers who teach in an area of preparation for which they are not certified (Lovette, 1996; Odell, 1990).

Novice teachers experience not only the shock of the classroom but also the personal shock of becoming teachers. The safety of the college/university classroom is gone. In its place are school rooms where peers and administrators expect the fledgling teacher to know how to teach and how to handle the day-to-day routine. Stress sets in, and the beginner looks for emotional support (Huling-Austin as cited in Gratch, 1998).

A collegial partnership: The Entry Year Assistance Program

Although a school district may mentor its own teachers, the viability of a college/university mentoring program is not unusual. The collaborative involvement "between a college of education and a local school district" (Odell, 1990, 19) for an extended mentoring program is available. One example of such a partnership is Chadron State College's (Nebraska) Entry Year Assistance Program (EYAP).

In 1985 the Education Department at Chadron State College (CSC) designed, developed, and implemented an Entry Year Assistance Program. Local school districts participated in the program. Beginning teachers were visited twice a year at the respective school sites. In 1988-1989 because of staffing and budgeting considerations, the Department modified the program. Visitations were made--and continue today--in conjunction with undergraduate field experience visitations by faculty members. The visiting college faculty, as they supervise student teachers, often have visited with building principals to determine the progress of student teachers. At that time the college supervisor inquires about new faculty to the building. Beginning teacher names are obtained from the principal. Since 1994 a faculty member has been assigned as the coordinator of EYAP.

From 1994 to the fall of 1997, school visitations continued. However, with a change in faculty responsibilities, a new coordinator was assigned the position. This individual continues the school visitations as she supervises student teachers. However, a new format for EYAP has emerged. Semester seminars have been established on campus, and beginning teachers are invited to attend at no cost.

The process for gleaning new teacher names has modified. Principals still are asked names in the visitation process. However, the coordinator writes letters to all superintendents of local school districts, county superintendents, and educational service unit directors for new teacher names. Also, the recent graduate list from the College's Placement Office is used to determine newly hired teachers by school districts within the service area. Once the names are obtained, the coordinator writes informational letters to the principal, county superintendents, educational service directors, and the beginning teachers explaining the EYAP seminar and the services the College offers to new teachers.

Included along with the new teacher letter has been an invitation to the on-campus seminar for all new teachers. Whether or not the teacher is a graduate from CSC is not an issue; all first year teachers beginning their careers in the Panhandle are invited. The number of teachers who have been identified as beginning teachers varies each year. Some of the first year teachers are Chadron graduates who have reported their positions as out-of-area (another state or eastern Nebraska). Often they will contact the EYAP coordinator by electronic mail, write a note, or place a telephone call. College education faculty are available as mentors also. The first year teacher, quite often a graduate of Chadron, already has made a link to a faculty member and has sought advice.

From the Fall of 1996 to the Spring of 1998, Chadron State College hosted a teacher luncheon. Last year, and continuing into this year, the Nebraska State Education Association (NSEA) Panhandle District Center for Teaching and Learning has provided for the luncheon. The NSEA uni-serve director and the EYAP coordinator work in conjunction to plan the seminar. Whether the seminar has been CSC's own or in conjunction with NSEA, the format has been similar. A panel of teachers from the College campus including general and special methods instructors, special education and early childhood instructors, and Chadron Public School faculty have worked together to offer suggestions regarding questions and concerns from the new teachers.

As a beginning activity, the newly hired teachers join in a small group brainstorming session during which time they list their concerns regarding their positions and needs. Once collected, the information is grouped into similar headings and a discussion begins. This continues until the noon hour, at which time the entire group adjourns for lunch. Immediately following the meal, a guest speaker addresses the group with an inspirational message. Any issues remaining from the earlier part of the day are addressed. An offer to visit individuals at school sites is made at this time with the stipulation that no evaluations will be made by the visiting College representative.

One additional aspect to the seminar setting had been added in 1998, Process Observers. These individuals are elementary and secondary pre-service teachers who are in their last semester of class work before the field experience. As a group, they meet with the uni-serve director to learn how to listen, take notes, and provide feedback. At the seminar, these individuals sit quietly and take notes. At the conclusion of the day, the Process Observers share what they learned about the first year of teaching. In turn these individuals return to their respective methods classes and share information.

Discussion

Although the EYAP seminar and the follow-up visits to local school districts seems to be working, not all teachers are involved in the mentoring process. However, with the passage of legislation for mandated teacher mentoring, the picture will change. Will it be the EYAP seminar approach of Chadron State College? While there are other programs within the state of Nebraska, the Nebraska State Education Association has selected the Entry Year Assistance Program of Chadron State College the model to replicate for mandated state mentoring.

Several positive findings from EYAP seminars are worth noting. New teachers decide on the topics they discuss. The coordinator facilitates the discussion while the "experts" respond. The focus is not so much on prescribing methods or techniques. Rather, the veteran respondents and college faculty open a dialogue for reflection. What decision the novice makes is his or her decision, but it is a decision made with information gleaned from the seminar.

Because no evaluative judgments are brought to the table and no administrator is present, the new teachers feel secure in sharing their frustrations, concerns and needs. Following are quotes taken from the 1997 and 1998 evaluation forms:

Sharing openly, felt safe.

Collegial atmosphere and the opportunity to freely express concerns.

The ability to bring up real concerns and hear they are concerns others are having. Friendliness and frankness.
I'm not alone nor are my problems unique. Listening to others, their problems and solutions.
Sometimes it helps to just talk about positive and negative experiences.
It was nice to hear from others who also have 1st year jitters!

Information feedback for College faculty and the coordinator is significant. From the questions novices bring to the seminar, College faculty learn what has or has not been crucial in the preparation of teachers at CSC. Broad topics emerge from the brainstorming session and have included the following topic headings: Special Needs Students, Parental Involvement, Violence and Abuse, Acceptance by Staff, Staff Culture, School Board, Administrative Issues, and Substitute Teachers.

Classroom management with emphasis on discipline consistently comes up as a concern, especially for high school and special needs students. Foul language and violent student concerns first appeared on the discussion list in the Spring of 1998; so too did the issue of lawsuits against teachers by parents. Another parental issue was justifying grades and class processes, and poor communication with home. Gang issues, vandalism and ensuing fights and rumbles associated with gang activity have been concerns with teachers serving specific populations. Furthermore, there appears to be a need for more information about special needs students and more specific examples for coping with these students; anger and anger-coping skills; yearly up-dates for school law.

Some thoughts about the format and process were expressed by the novice teachers:
I thought it was an effective way to address issues and concerns influencing first year teachers.
I liked the brainstormed agenda.
Lots of feedback! Possible solutions for areas of concern.
All the different experience levels of the contributors.

For the Process Observers some of their questions were answered. "Listening to what first/second year teachers are experiencing gave me things to think about." "I have a better idea about when I interview for a job and consider a contract."

Feedback regarding college faculty participation was addressed: "I just want to be able to network with CSC staff as needed." "The input from different areas represented by CSC staff was also appreciated." "I thought the faculty were so approachable and helpful."

Several beginning teachers have further visited with college faculty, the EYAP coordinator, or the uni-serve director at a site, or have further discussed issues. In these specific cases, the mentor has tailored support for the teacher (Odell, 1990) without evaluation.

The Process Observers learn a skill and realize how significant the information they hear is to the first year teacher. Sharing with their colleagues in class, the observers bring another dimension to classroom learning; theory becomes reality. Although students will experience a semester of student teaching, the experience is restrictive. The student teacher enters a classroom that already has been organized by a veteran teacher, and discipline is usually in place. Curriculum issues have been resolved, and material selections have been made.

Summary

In the final analysis, whether or not Chadron State College's Entry Year Assistance Program becomes a state-model for teacher mentoring, the faculty of the College are supportive of mentoring and the process that has assisted novice teachers. The sink-or-swim belief for first-year teachers is not necessary. There are individuals who can and do assist, sometimes by simply offering moral support. The thought that no one is isolated takes on new meaning. Mentoring is a collegial process involving the local school district, College faculty, and the Association.

No only are faculty assisting beginning teachers, they themselves are more cognizant of and responsive to novice teacher needs. Concerns of the beginning teacher become aspects for program improvement. Incorporating areas of concern from the EYAP seminars into the pre-service teacher course work and seminars has proven helpful to the pre-service teacher.

For the uni-serve director, the needs of the new teacher can be more fully addressed in Association orientation for the novice teacher. Furthermore, EYAP has proven to be a vehicle for a collaborative effort between the Association and the College to focus on the development of the beginning teacher and further develop mentoring programs for the novice teacher.

In this collaborative approach to beginning teacher mentoring, all participants come to the table sharing and solving problems. The new teacher is nurtured; mentoring strengthens the beginning teacher and develops security and confidence for the individual (Odell, 1990). The profession may be able to retain quality educators. As one participant indicated, "I am leaving with a positive attitude and renewed spirit."

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PREPARING CONSULTANT SPECIALISTS: EDUCATION OF THE DEAF AND HARD OF HEARING

INTRODUCTION

For decades the education of the deaf and hard of hearing in America has benefitted from two critical features in the professional preparation of instructional personnel, particularly teachers. These two critical features are: (1) a sufficient number of comprehensive, quality teacher-training programs at the college and university level; and (2) a sufficient number of experienced, qualified veteran teachers of the deaf and hard of hearing to provide beginning teachers with instructional leadership/supervision of instruction.

As a direct result of the second feature, beginning teachers of the deaf and hard of hearing in America have, in a very real sense, experienced a teaching internship which enabled them to enhance and extend their teaching knowledge and skills under the guidance of a master teacher. In contrast, this has not been true either in general education or in other areas of special education.

The availability of master teachers to plan, organize, and manage the beginning teacher's teaching internship is the result, in part, of the prevalence of state residential school placement options for the deaf and hard of hearing. Historically, this type of placement option for deaf and hard of hearing students provided the opportunity for quality teaching internships for beginning teachers because of the presence of a critical mass of deaf students. Furthermore, state residential schools offered comprehensive programs and had experienced educators who provided instructional leadership as departmental supervisors.

Pioneer leadership in the education of the deaf and hard of hearing recognized the value and importance of an internship for the beginning teacher of the deaf and hard of hearing, as noted sixty years ago by Mildred Groht, Principal of the Lexington School for the Deaf in New York:

> In no field of education is the position of the supervising teacher more important or more necessary than schools for deaf children. Important because the type and quality of the classroom teaching done in any school for the deaf depends to a very great extent upon the leadership of the supervising teacher.

The fundamental premise for continued quality instruction in the education of the deaf and hard of hearing continues. David Denton stated many years after Ms. Groht:

> Staffing an educational program with a group of well trained and highly skilled teachers does not guarantee that the program will be a successful one; or even a good one. A beautifully conceived and masterfully designed course of study, similarly, gives no assurance that the consumers of the educational effort will benefit. The energy and skill of expert teachers are soon dissipated unless harnessed, directed, and applied to the learning of children through an organized effort which remains continually sensitive and

responsive to the changing needs of individual children. This is the rationale for supervision.

Today, the provision of quality instructional program leadership in the United States has become a major problem in the education of the deaf and hard of hearing. While pre-service training efforts continue to grow and meet changing needs, special education programs for deaf and hard of hearing students have suffered a serious shortage of qualified, master teachers to provide instructional leadership to programs. Why is this?

Even a cursory review of enrollment demographics in the field of the education of the deaf and hard of hearing clearly shows the dramatic shift in school enrollments from residential special schools to local educational agency programs. The results of this enrollment shift are a loss of critical mass (numbers) enrollments in state schools and the proliferation of many programs for deaf and hard of hearing children with enrollments under twenty students. This "scattering" of enrollment of deaf and hard of hearing students in Local Education Agencies (LEA) programs is even more dramatic in rural areas where program enrollment is often only one or two students.

INSTRUCTIONAL LEADERSHIP FOR THE DECADE AHEAD

Accepting the premise that instructional leadership plays a critical role in the quality of education of deaf and hard of hearing children, the question remains: How to best prepare qualified personnel to assume this role for current programs in special education?

The proposition must recognize several relevant characteristics in the education of the deaf and hard of hearing today. These include: (1) the significant shift of enrollments to local public schools; (2) the major role regular classroom teachers play in the education of deaf and hard of hearing children, many of whom are in rural areas; (3) the important contributions being made by related service specialists; (4) the focus for instructional leadership in the education of the deaf and hard of hearing probably being regional instead of site-based; and (5) the preparation of instructional leadership today for the education of the deaf and hard of hearing being qualitatively different from the days of Mildred Groht in the first half of this century.

Several studies have made important observations about the changing nature of supervising instruction in the education of the deaf and hard of hearing. Among these, Barry Griffing noted the evolving nature in stating:

> In an educational era in the education of the deaf (and hard of hearing) when there is pressure for improvement and innovation, the need for supervisory leadership is greater than ever before. There is need for more supervision than is presently available, and there is need for a different kind of supervision than previously provided....

Griffing recognized that previous ideas of supervision implied managing or controlling what exists. His notion of "supervision" recognized the emerging role of supervision as instructional leader, one who understands the agencies' vision/mission and who has the knowledge, skills, attitudes and strategies to help people achieve quality instructional programs while working together in a collaborative manner. An example of this conceptual view of instructional leadership has been expressed by Patricia Braught and highlights the modern approach of collaborative consultation:

> ...an educational consultant or supervisor should approach his/her contribution to the overall work in the school as a coordinator of communications and consultation -- attempting to draw people together to pool their knowledge and ideas.

This different concept of instructional leadership is cited by Lorna Idol, Ann Nevin and Phyllis Paolucci-Whitcomb:

> Primarily, collaborative consultation is an interactive process that enables groups of people with diverse expertise to generate creative solutions to mutually defined problems.

Currently, Idaho State University's Intermountain Instructional Leadership Program (IILP) is training "Consultant Specialists: Education of the Deaf and Hard of Hearing." It is the training of instructional leaders for educational programs for the deaf and hard of hearing. This is an Educational Specialist degree program (Ed.S.) designed to prepare a post-master's professional who will be able to provide instructional leadership to programs and services for deaf and hard of hearing students in a variety of school placement options. Such preparation of Consultant Specialists takes into account the particular demographics of these students in many local school placements.

The program's training focus is designed to create a leadership style that recognizes kinds of teachers (teachers of the deaf and hard of hearing, regular teachers, resource specialists, related services specialists, and others) with whom the Consultant Specialists must work in developing and improving instructional programs. The program recognizes that the position, in all probability, will not be site-based; serving more appropriately a region or consortium of school districts. Sometimes school sites will be in rural regions of states.

A most critical aspect of this training approach is the "supervisory style" which must be used to serve the educational programs. That is, the Consultant Specialist must learn and use *a collaborative consultant* approach. The professional preparation is designed to equip the professional with enhanced professional knowledge and skills so that he/she has a wide range of abilities to draw upon when using a collaborative consultation approach in working with schools, agencies, organizations, communities and parents to develop and improve the education for deaf and hard of hearing students. Collaborative consultation is an interactive, reciprocal, and mutual process of bringing resources together when working toward common goals.

There are prerequisite qualifications for those who would pursue this new style of instructional leadership to become Consultant Specialists. Those prerequisites include:

- An earned Master's Degree in the education of the deaf and hard of hearing
- Eligibility for certification as a teacher by the Council on Deafness (CED)
- Completion of a minimum of five years of successful classroom teaching of the deaf and hard of hearing.
- Letters of recommendation which support the individual as someone who can work effectively with people in a leadership capacity.

The professional training program consists of three summer sessions of training and two intervening academic school years. The schedule is such that these Ed S. students can commence enrollment beginning in a summer and complete the program after the third summer, with some course work taken at a local university used as transfer credits.

The training program consists of three major components. The first consists of post-masters courses which students must take at Idaho State University in the following areas, totaling some 30 graduate credit hours:

- Curriculum Foundations and Development
- Research and Writing in Education
- Collaborative Consultation in Schools
- Supervision of Instruction
- Planning and Evaluation
- Policies and Politics
- Professional Development in Education
- Educational Measurements
- Organization and Individual Behaviors

The second component of the training program includes planning and conducting a professional study resulting in a professional Consultant Specialists paper. This study typically is planned during the first summer semester conducted during the second spring semester, and concluded at the end of the last summer semester. The study and paper is planned so that graduate students pursue an issue or topic of interest to themselves and of value to the field.

The third component of the training plan is an internship. Students are expected to use the final spring semester for the internship. Students may return to their previous school, agency, or organization with approval of the site administrator and the University. The internship experience is varied depending upon the student, the site, and the specific training needs identified with the student.

The site(s) of the internship need not be the student's school or agency working exclusively with deaf and hard of hearing students. It may be working as an intern consultant in a State Department of Education, in a consortium of school districts, or a state or community agency or organization.

Besides the obvious measures of success - completion of the graduate education program and graduation - there are evaluations made on the professional performance of Ed.S. students. These include assessment of seven areas of performance:

- **Professional Preparation:** Demonstrates reasonable effort has been made to come prepared for a task or assignment.
- **Professional Performance:** Demonstrates skills in the quality of work performed carrying out various assignments.
- **Professional Technical Skills:** Uses knowledge, skills, and experiences in application toward task solutions.
- **Communications:** Demonstrates the capacity to work effectively with other professional staff, related service agencies, and parents.
- **Professional Relations:** Works effectively and cooperatively with community agencies and outside organizations.
- **Research and Evaluation:** Application of research and evaluation methods and materials in working on tasks and assignments.

"Consultant Specialists: Education of the Deaf and Hard of Hearing" graduates will be characteristically different from the historical concept of the supervising teacher in that they will develop resources instead of giving advice, build task teams instead of planning and organizing the work, coordinate instead of giving directions, and confer instead of telling others what to do.

SUMMARY

The United States Office of Education is supporting the concept of instructional leadership in programs for the deaf and hard of hearing across America. The "Consultant Specialist: Education of the Deaf and Hard of Hearing" project at Idaho State University includes establishing at least three additional university professional preparation programs for preparing individuals for this instructional leadership role. The intention is to establish additional instructional leadership preparation programs on a regional basis.

The new instructional leader in the education of the deaf and hard of hearing will be the reason teachers and specialists become highly skilled in meeting the educational needs of deaf and hard of hearing students. Highly skilled teachers, working with the support of an instructional leader, will yield appropriate educational programs.

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PRACTICAL STRATEGIES FOR IMPLEMENTING THE PROVISIONS OF THE INDIVIDUALS WITH DISABILITIES EDUCATION ACT OF 1997(IDEA) IN RURAL SETTINGS

Many of the new provisions of Public Law 105-17, the Individuals with Disabilities Education Act of 1997 (IDEA), contain significant implications for teacher educators and practitioners and pose particular challenges to those committed to ensuring that the requirements are met for children and youth with disabilities in rural settings. Indeed, the characteristics of rural settings, including availability of personnel and access to resources needed to fully implement the requirements of the Act, intensify the implications. The purposes of this paper are to: (1) discuss personnel preparation data relevant to ensuring all individuals possess the necessary competencies to meet the needs of students with disabilities in general and special education settings; (2) present the key provisions of IDEA that relate to ensuring quality personnel preparation and educational services in rural settings; and (3) identify ways in which personnel preparation activities and utilization of existing resources in rural settings can be maximized to ensure full implementation of the IDEA.

As we move rapidly toward the twenty-first century, the educational community is faced with a myriad of challenges in ensuring that all students receive their instruction from well-trained, competent teachers and other practitioners and that their course work and other related activities prepare them to be contributing members of our society. We, as educators, understand the complexity of this undertaking and are striving to meet the need through restructuring both our teacher preparation programs and our schools. A focus of this endeavor must include those students who are receiving their preschool, elementary and secondary education in rural settings, and our teacher preparation activities, both pre-service and in-service, must include creative ways of providing the needed personnel preparation in those settings.

A call to ensure quality teacher preparation for all students was issued in 1994 by the National Council on the Accreditation of Teacher Education (NCATE) (Darling-Hammond, 1994). They stated that the alignment of local, state, and federal policies was necessary in order to have a seamless system of professional development from recruitment to retirement, with effective, collaborative partnerships that lead to high standards of teaching. Two years later, the bipartisan National Commission on Teaching and America's Future, in its report entitled "What Matters Most: Teaching for America's Future," cited teacher preparation as one of a number of deficiencies affecting teaching and learning in America's schools and issued a call to recruit, prepare, and support excellent teachers for every school (National Commission on Teaching and America's Future, 1996).

However, the annual 1997 Education Week/Pew Charitable Trusts Report on Education in the 50 states indicated that Schools of Education in institutions of higher education are not currently producing teachers who are qualified to educate America's children and youth (Quality Counts, 1997). More recent data suggests that a critical shortage of teachers who are fully certified to teach in their field continues (Quality Counts, 1999). For students with disabilities, with each passing year, the number of teachers fully certified to teach them decreases (For IDEA, many states rely on fewer teachers, 1998). Indeed, the U.S. Department of Education states that there is "convincing evidence of a national substantial chronic shortage of special education teachers who are fully certified in their positions. Evidence suggests that the number of graduates in special education teacher preparation programs is much too low to satisfy the need for fully certified teachers" (U.S. Department of Education, 1998, p. vi). It is reasonable to assume that this shortage of personnel, both in quantity as well as in quality of personnel fully certified to teach students with disabilities, is at least as high, if not higher, in rural areas.

As recently as January, 1999, the need for qualified teachers and educational accountability has been expressed by federal officials (Clinton's State of the Union Address, 1999). The administration's intent to ensure a well-trained cadre of teachers to meet the needs of all students, including those with disabilities, was expressed clearly in the reauthorization of the Individuals with Disabilities Education Act of 1997 (IDEA) in June, 1997. To support the preparation of competent personnel, the IDEA included a competitive grant program, the State Program Improvement Grants for Children with Disabilities (SIG), designed to assist state education agencies, working in partnership with institutions of higher education and other entities within the state, to ensure the preparation of a competent teaching force. At least 75% of the monies for these grants, between $500,000 and $2 million per year for five years, must be utilized for personnel development activities at both the pre-service and in-service levels. As part of the application process for these grants, the state education agency must submit a State Improvement Plan (SIP) that describes how the State will (a) prepare general and special education personnel with the content knowledge and collaborative skills needed to meet the needs of children with disabilities; (b) prepare professionals and paraprofessionals in the area of early intervention with the content knowledge and collaborative skills needed to meet the needs of infants and toddlers with disabilities; (c) work with institutions of higher education and other entities that (on both a pre-service and an in-service basis) prepare personnel who work with children with disabilities to ensure that those institutions and entities develop the capacity to support quality professional development programs that meet State and local needs; and (d) enhance the ability of teachers and others to use strategies, such as behavioral intervention, to address the conduct of children with disabilities that impedes their learning and the learning of others (Public Law 105-17, 1997).

This language is clearly designed to impact positively the current teacher shortage. As we look at the potential of this legislation for improving the teaching and learning of students with disabilities in rural settings, it becomes clear that state education agencies must work with institutions of higher education to develop ways to increase the number of teachers currently providing services to students with disabilities and decrease, and potentially eliminate, the number of personnel working without appropriate credentials, particularly in the area of special education. States must devise ways for minimizing the barriers posed by geographic constraints for accessing teacher preparation programs that are experienced in rural settings. Further, states must utilize these funds to support both pre-service and in-service programs that are designed to address the educational needs of infants, toddlers, children and youth who reside in rural environments. Moreover, states must devise incentives, including financial incentives and quality personnel preparation activities, to attract and retain their teachers.

For true educational restructuring that results in improved teaching, learning, and educational outcomes to occur, the way in which we deliver instruction to students with disabilities must be part of this process. This means that each individual student's abilities and needs must be examined carefully to determine the most beneficial match between general classroom instruction and the delivery of special education services. This philosophy is supported through the Least Restrictive Environment (LRE) requirements of the IDEA. The IDEA of 1997 stipulates that students be removed from general education programs only when the nature or severity of their disability is such that education in general education classrooms, even with the use of supplementary aids and services, cannot be provided satisfactorily. The IDEA mandates that students with disabilities receive their education with nondisabled peers to the maximum extent appropriate.

Provisions for an appropriate education for special education students in the least restrictive environment continues to be a real challenge to schools. According to the 20th Annual Report to Congress on the Implementation of the Individuals with Disabilities Education Act, "in 1995-96, more than 95% of students with disabilities, ages 6 though 21, attended schools with their nondisabled peers." (U.S. Department of Education, 1998, p. III-34). Approximately 45% of these students spend approximately 80% of their entire school day in general education classes and another 24% students were enrolled in general education settings between 21 and 60% of their day (U.S. Department of Education, 1998). The percentage of learners with disabilities attending general education classes has increased steadily every year since the advent of P.L. 94-142, the Education of All Handicapped Children Act in 1975, and all indications are this trend will continue. Providing educational services to students with disabilities in general education settings calls for a "shared ownership" approach to meetings the educational needs of students with disabilities by general and special educators. In reality, this partnership is requiring that many general educators assume an increased responsibility for students with disabilities in their classes without the concomitant personnel preparation and effective support systems necessary to do the job. For many of them, their active participation in the design and delivery of individualized programs for students with disabilities with the required supplementary aids and services, adaptations, modifications, and accommodations requires an increase in their knowledge base and a willingness to open their traditionally private classrooms to special educators. For special educators, inclusion of students with disabilities in general education classrooms requires skill in effectively interacting with other professionals and sharing responsibility for students once considered the domain of special education alone. For both special and general educators, inclusion of students with disabilities in general education classrooms requires collaboration and communication skills and competencies that neither have been taught during their pre-service preparation. Including students with disabilities in general education classrooms creates a need for communication, coordination, and collaboration among a total school staff, as well as other stakeholders, such as community agencies and the business community, to enable them to implement responsible inclusion with the necessary array of programs, services, and supports.

The increased focus on the general education curriculum and the expanded role of all educators in the education of students with disabilities is paramount in the IDEA of 1997. For purposes of this article, these changes and the instructional implications associated with each change for teacher educators will be addressed by the following provisions: Evaluation and Reevaluation; Individualized Education Program (IEP); and Individualized Education Program-Transition Services.

Evaluation/Reevaluation

The provisions of the IDEA that address the evaluation and reevaluation of students with disabilities consists of several major components. The 1997 IDEA amendments require (1) participation of parent(s) for both initial and triennial evaluations; and (2)consideration of information provided by the parent by the evaluation team when determining eligibility for special education and related services and by the Individualized Education Program (IEP) team when determining the educational programs, services, and supports needed for the student to achieve satisfactorily in the general education setting.

The instructional implications for teacher educators based on these new provisions are many. Practitioners need to be prepared with the knowledge and skills to communicate with parents, including those with culturally and linguistically diverse needs. Practitioners will need to possess sophisticated skills for listening, requesting information in a non-threatening and non-judgmental manner, and conducting meaningful parent conferences and quality IEP meetings. All practitioners and parents need to be aware of, and utilize, the resources available through federally-funded clearinghouses such as the National Information Center for Children and Youth with Disabilities (NICHCY), the technical assistance centers such as the Technical Assistance to Parent Programs (TAPP) Network, the federally-funded Parent Training and Information Centers (PTI) that exist in all states, and state affiliates of national disability and advocacy organizations. These resources are particularly critical for those in rural areas as they strive to provide parents with necessary information to ensure their full and equitable participation in the educational decision-making regarding their son or daughter's educational program.

Practitioners must also be skilled in obtaining, interpreting, utilizing, and reporting information to incorporate into evaluations, reevaluations, and individual education programs (IEP). Observational skills need to be well-honed. All practitioners must be competent to select, administer, and interpret a myriad of assessment strategies, including norm- and criterion-referenced, authentic, and teacher made tests to determine what factors are contributing to a student's learning and motivation.

Individualized Education Program (IEP)

The new provisions require that the Individualized Education Program (IEP) include the following: (1) a statement of the student's present level of performance which includes how the student's disability affects his or her involvement and progress in the general education curriculum; (2) measurable annual goals, including benchmarks or short term objectives that are related to the student's needs and that are designed in such a way as to enable him or her to be involved in the general education curriculum; (3) a statement of special education and related services and the supplementary aids and services to be provided to the student; and (4) a statement of program modifications and supports for school personnel that will be provided on behalf of the student. Moreover, the new regulations alsó require that the IEP include (a) a statement of how the child's progress toward the annual goals will be measured; and (b) how the child's parents will be regularly informed (through such means as periodic report cards) at least as often as parents are informed of their nondisabled child's progress. Finally, the new regulations require that the student's general education teacher participate in the development, review, and revision of the student's IEP, if the student is, or is likely to be, enrolled in the general education program.

In order to implement the above outlined provisions of the IEP, teachers and other support personnel need to know the components of the general education curriculum to ensure they have the know how to adopt/accommodate them. In order that they may design appropriate program modifications, prospective and veteran teachers need to be knowledgeable regarding the roles and responsibilities of general educators. These regulations reinforce the need for all practitioners to develop a repertoire of communication strategies to parents including telephone calls, journals, notes, newsletters, two-way notebooks, and electronic means such as voice mail, facsimiles, and e-mail. Teachers, through pre-service and in-service activities, must also develop competencies for conducting authentic assessments and implementing alternative forms of grading, such as contract grading, pass/fail, videotaping, and work samples.

Another significant addition to the reauthorization is the requirement that all teachers, including general educators, participate in the design and implementation of a functional behavioral assessment and a behavioral intervention plan for students whose behavior is interfering with his or her learning or the learning of others. All teachers must be skilled in assisting in the determination of appropriate positive behavioral interventions. The provision allows for the assistance of school psychologists and social workers in developing these behavioral interventions and program modifications and reinforces the need for collaborative planning. Collaboration involved with the student's program is crucial to its success. Several programs with require significant collaboration for success include school-wide behavioral intervention plans, wrap-around programs, and peer mediation. We must ensure that all pre-service programs include these strategies in their instructional programs. As noted in the National Agenda for Achieving Better Results for Children and Youth with Serious Emotional Disturbance (U.S. Department of Education, 1994), collaboration involved with the student's program is crucial to its success.

The new regulations added four scenarios in addition to the consideration of the student's behavior that impact personnel preparation activities. Specifically, the regulations require that the IEP team consider whether (a) the child needs assistive technology aids and services; (b) the child who is considered Limited English Proficient needs special education and related services in English or another language; (c) a child who is blind or visually impaired needs instruction in Braille; and (d) a child who is deaf or hard of hearing is being provided with appropriate opportunities for direct communication with peers and professional personnel and whether the student's language and communication needs are being met.

These regulations pose particular challenges to teacher education programs, particularly those programs preparing teachers for rural areas, as more and more students with disabilities, including those with culturally and linguistically diverse needs and low incidence disabilities, are being included in general education programs. These regulations, as much as any of the others, dictate that future teachers must have command of the resources which are available within their school, district, state, and from federally-funded projects. They also require critical collaboration skills with all possible service providers, including bilingual and English as a Second Language (ESOL) teachers, related services personnel such as occupational and physical therapists, orientation and mobility specialists, speech and language pathologists, and educational interpreters. They must ensure that they have at least a working knowledge of the common assistive technology aids and services, including augmentative and facilitative communication devices. They must also ensure that they are able to recognize the needs of culturally and linguistically diverse families and work in concert with them to ensure their children are provided quality educational opportunities.

Individualized Education Program-Transition Services

The transition services provisions of the IDEA 1997 are included in the IEP section of the regulations. We have chosen to discuss these services separately since they are so crucial for students, their families, and teacher educators. In addition, it is through quality transition services that we will address the call for all educational reforms to ensure that students are prepared for the workplace after exiting school.

Transition services are defined as a set of coordinated activities that are designed within an outcome-oriented process which promotes movement from school to postschool activities. Transition services are based on an individual's needs, taking to account the student's preferences and interests. A statement of needed transition services must be included in the IEP of every student beginning at age 16, or at a younger age if appropriate.

Several important requirements have been added to the transition services area in IDEA 1997. First, the statement of needed transition services now includes needed related services. Second, the new requirements provide for the invitation of the student, at any age, to his or her IEP meeting if the purpose of the meeting is to consider transition services. Third, beginning at age 14, the IEP must have a statement of the transition service needs that focus on the student's courses of study to assist the student in selecting courses that will help him/her in being prepared for his/her chosen postsecondary activity.

Delivering quality transition programs in rural settings has always posed challenges to students, families and educators given the paucity of training activities and employment opportunities and sometimes related services personnel and adult services providers. However, teachers must realize that there are successful transition programs in rural areas. They need to be aware of such resources as the National Transition Alliance and the National School to Work office where much valuable information can be obtained. Many of these success programs have involved initiation of their own entrepreneurial ventures to ensure the contextual learning needed by students as well as ensure sustainability of the venture within the community. Such programs will ensure jobs for the students upon exiting the school setting. Engagement of the school with the business community in this way fosters linkages critical to postschool employment opportunities. Practitioners should also access the services of other local, state and federal governmental agencies such as Bureau of Indian Affairs, Health and Human Services, and Department of Labor to access programs and funding streams to meet the needs of transitioning youth.

Conclusion

Throughout the paper, we have suggested strategies for maximizing existing resources in rural settings to meet the requirements of the IDEA. There are many questions and challenges that still need to be addressed to ensure that all students have available to them a competent teacher and support personnel. For example, How does a quality teacher education program meet the needs of student teachers who are hours and miles away from the program? How do teacher preparation programs assure these provisions of the IDEA of 1997 are fully implemented in rural areas?

Most discussions and writings on the topic of quality education for all students assume access to services while failing to understand the issues specific to rural settings. In rural settings, additional resources such as crisis intervention personnel, social work personnel, psychological personnel, counseling personnel including rehabilitation counselors, and parent counseling and training personnel may all be needed and may not be readily accessible. Institutions of higher education may be the conduit in the state that connects the needs to the services. It is further suggested that rural practitioners create a wrap-around system of support for their students and families. In order for this wrap-around approach to be successful, teacher educators must assure that practitioners are aware of the components of a successful wrap-around program and must oftentimes assist in developing such service models. Similarly, practitioners must engage the resources of the business community and other community agencies in working in concert to provide the needed services.

Distance education is a must for teacher preparation in rural areas. Use of internet programs, public television presentations, e-mail correspondence, teacher talk networks, course modules, and other distant delivery models are paramount and many prototypes of this type of service delivery model are being developed throughout the country. It is only through working together with all stakeholders that we will meet the needs of infants, toddlers, children, and youth in rural settings.

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SYSTEMIC THINKING TO SUPPORT DINE EDUCATION

Introduction

The Navajo Nation is the largest American Indian nation in existence, covering a vast geographical area of 25,000 square miles within the states of Arizona, New Mexico, and Utah. The Division of Dine Education is the agency within the Navajo Nation government with responsibilities for: (a) developing policies and programs for quality education; (b) promoting the inclusion of Navajo language and culture into school curricula; (c) advocating for unmet educational needs; and, (d) identifying and promoting innovative solutions to educational problems. Over the past twenty-seven years since the Division of Dine Education established, the agency has consistently pursued its agenda of capacity building through the cultivation of substantial inter-agency partnerships. This paper describes systemic thinking in support of the recently established Navajo Nation Rural Systemic Initiative for the improvement of mathematics, science, and technology within p-12 schools on or near the Navajo Nation. This system focused change project builds on the successful experiences gained through the Ford Foundation funded Navajo Teacher Education Consortium and the National Science Foundation funded Navajo Coalition of the UCAN (Utah, Colorado, Arizona, New Mexico) Rural Systemic Initiative.

The Navajo Nation Rural Systemic Initiative was established specifically for the benefit of the 70,518 Navajo and other students attending 173 elementary and secondary schools on or near the Navajo Nation. The purpose of the Rural Systemic Initiative is to create a standards-based, student-centered teaching and learning environment in mathematics, science, and technology within each school. This ambitious project seeks to attain this vision through the accomplishment of six distinct program drivers that include the following: (1) student attainment and achievement; (2) closing the gap between the achievement of Navajo and non-Navajo students; (3) curriculum and assessment; (4) policy; (5) resource convergence; and, (6) broad-based support. This paper provides a description of all six program drivers, with specific attention to the systemic thinking those guides the development of the program in meeting the unique needs of teachers and students in the rural areas of the Navajo Nation. The project focus includes public schools, Bureau of Indian Affairs schools, boarding schools, and private schools. The convergence of limited resources within the service area is intended to address the complexities of standards-based reform in a geographical area that impacts the most rural situation within Utah, Arizona, New Mexico, and the territory served by the Bureau of Indian Affairs.

Student Attainment and Achievement Driver

A variety of information on the educational achievement of Navajo students has been collected through the efforts of the National Science Foundation's UCAN Rural Systemic Initiative. Minnick & Varoz (1997) summarized a variety of data that were obtained through student surveys, teacher surveys, school reports, based on survey instruments of their own construction. Outside reports from the American College Testing Service, the Councils of Post-Secondary Education, the State Departments of Education in Arizona, New Mexico, and Utah, and the National Center for Advanced Placement examinations were also utilized to address different aspects of student achievement and attainment.

The types of results being pursued include a number of indirect measures of student achievement such as increases in positive attitudes toward mathematics and science and increased participation in mathematics and science clubs. Process measures have been identified including indicators such as increased student enrollments in mathematics and science courses and increased access to the inter-net. Another set of process measures considers the increased numbers of students enrolling in post-secondary educational institutions.

The direct measures of student achievement and attainment are also included within the design and encompass the numbers of students taking and passing criterion-referenced mathematics and science tests. The more traditional measures such as increased numbers of students scoring in the top two quartiles on norm-referenced mathematics and science tests are also included. A difficulty in the analysis of this information can be found in the different norm-referenced measures of student achievement that are currently being used in the different state education agencies serving the Navajo Nation. To address these issues, the Navajo Nation Rural Systemic Initiative has embarked on the development of a Navajo Education Information System (NEIS) to systematically collect and address these differences (Rude, Hopkins & Horton, 1998). The NEIS represents an expansion of data collection efforts from the Division of Dine Education, and support the quality efforts for dissemination through publications such as the Statistics on Navajo (Dine) education (Izzo-Mannymules, 1996).

Closing the Gap Driver

The under-achievement and under-representation of students from the Navajo Nation in the mathematics and science curricula remain major challenges to the educational system that it represents. There is a tremendous gap between the potential of Navajo students as they make their way through the preschool through grade twelve educational experience and the numbers of Navajo students entering the professional job market. This provides a pronounced disadvantage to Navajo youth as they pursue post-secondary options for careers that require extensive knowledge and application of science, mathematics, and technology.

A variety of strategies have been identified that will assist the various schools to overcome the gap between actual and expected levels of achievement for Navajo students. It is critical to provide early models of successful engagement in career fields that utilize mathematics, science, and technology as a vehicle for career exploration and choice in these disciplines. These career exploration programs extend beyond high school students to enrich the lives and potential professional occupations of middle school and upper elementary school students. Navajo children and youth are exposed to an education that integrates Navajo and Western knowledge about science, mathematics, and technology that provides a significant advantage in the quest to close the gap. The systematic incorporation of Navajo role models who have pursued careers as engineers, scientists, mathematicians, professors, and representatives of other professional fields is essential to building the strong foundation of interest and commitment to future careers and commitments to these disciplines. A progression of content includes the following sequence: (1) awareness of the importance of science, mathematics, and technology in every day life; (2) recognition of the importance of pursuing post-secondary education options to prepare for a professional career; (3) in-depth exploration of career fields in the areas of science, mathematics, and technology; and, (4) conceptual understanding of the integration of Navajo and Western scientific knowledge.

Curriculum and Assessment Driver

The Division of Dine Education has developed a comprehensive framework of curriculum based on Navajo language, culture, and the Dine Education Philosophy. A cornerstone of the Dine philosophy can be described as "Hozhoogo Naashaa" or "in beauty we walk." The inter-connectedness of Navajo and Western thought is particularly useful as a model for incorporating the critical directional concepts of thinking (east), planning/career (south), social/family (west), and reverence/respect (north). The balance of male protection way teachings and female blessing way teachings provide a complementary inter-relationship of values, concepts, curricula, and inter-disciplinary approaches.

The focal point of the Navajo system of education is found in the developing Elementary Teacher Education Program that was initiated in 1996 at Dine College in Tsaile, Arizona. The vision of this innovative program is to prepare Navajo teachers who are proficient in both Navajo and English language, with a focus on Navajo culture and the Dine Education Philosophy. The Dine themes that guide the program include: (1) Nitsaahakees which entails thinking about, conceptualizing, designing, researching, and preparing; (2) Nahat'a which focuses on planning, inquiring, investigating piloting, and experimenting; (3) Iina which fosters doing, accomplishing, producing, performing and publishing; and, (4) Siihasin which features the concepts of becoming experienced, expert and confident, able to adopt, adapt, and problem solve, and able to operate at a critical level of reflection. The curriculum and assessment focus incorporates Dine curriculum and assessment practices into pre-service and continuing education programs across the preschool, elementary, secondary, and post-secondary education systems. This lends support for an integrated system of Navajo and Western knowledge, performance, and dispositions.

Policy Driver

Through the sponsorship of the American Association of Colleges for Teacher Education and the Ford Foundation, the Navajo Nation Education Policy Forum was conducted in 1995. The results of the policy forum produced recommendations for improving the quality of Navajo education by: (1) increasing the number of certified Navajo teachers; (2) providing Navajo specific curriculum; (3) ensuring the teaching and learning of the Navajo language and culture; and, (4) expanding the infrastructure for delivery of educational services to the various schools and classrooms that comprise the Navajo system of education.

The Navajo Nation through the Division of Dine Education has consistently pursued a course of self-determination in the policies and procedures for its educational system. Hopkins & Rude (1996) summarized the major issues in support of this goal to include the following: (a) the sovereignty of the Navajo Nation government with legitimate authority for all aspects of the Navajo education system; (b) the need to recruit and retain qualified Navajo educators to deliver a quality educational experience to all Navajo learners; (c) the expectations for teacher preparation programs that are specifically designed for delivery to prospective teacher candidates in rural and remote areas of the Navajo Nation; and, (d) the support for Dine Education Philosophy as the guiding force behind all innovations in the Navajo system of education.

Resource Convergence Driver

A variety of resources and activities are available to assist the Navajo Nation in providing technical assistance and support for enhanced science, mathematics, and technology instruction in the various schools across the Nation. This priority recognizes the variety of promising practices that are currently taking place across the Navajo Nation that are not connected through a systematic network for dissemination and technical assistance to enhance the instructional outcomes in science, mathematics, and technology.

The convergence of resources targets the systematic linkage of promising partners within the preschool-grade twelve schools, higher education, business and community interests, parents/families and extended families, and the variety of educational associations. These stakeholders are concerned about raising the level of awareness, knowledge, performance, and dispositions related to the targeted areas of curriculum. To achieve this end, a variety of communications, networking, dissemination, and collaboration goals and strategies have been developed. This has resulted in a resource bank of technical assistance providers in science, mathematics, and technology across the Navajo Nation.

Broad-Based Support Driver

The cultivation of broad stakeholder support for the Navajo Nation Rural Systemic Initiative is paramount to implementation and institutionalization of the priority goals and outcomes of the project.

The integration of Western and Dine scientific knowledge requires system-wide understanding to achieve meaningful outcomes of effectiveness. To facilitate the understandings, connections, and support for the project, a multi-faceted campaign of awareness, information, and involvement has been developed.

The Navajo Nation Rural Systemic Initiative has developed a comprehensive strategy to publicize the efforts of the project and enlist the necessary support to expand and sustain the desired outcomes. A coordinated media campaign, selected workshops and conferences, brochures and other print media, periodic focus groups, and summaries of program results are among the more tangible outcomes that enlist broad-based support. The broad range of stakeholder representatives across education, business/economic development, and other government/service sectors of the Navajo Nation have been selected for participation to ensure the effectiveness of this driver to support the project.

Systemic Thinking as a Guide

The innovations specified by the Navajo Nation Rural Systemic Initiative are focused on increasing the success of Navajo learners in the critical areas of sciences, mathematics, and technology. As with most change efforts in education, the project specifies priorities that are technically simple and socially complex in relative terms. To connect the various pieces of the Navajo system of education in a purposeful manner requires a different type of thinking on the part of teachers, administrators, and parents. Thinking in strategic dimensions requires personal change and commitment on the part of stakeholders to consider new options for thinking beyond current issues and concerns. All change and commitment must start with the individual or the potential for deep change is effectively neutralized. Quinn (1996) contrasts the requirement for deep change as a personal commitment with the reluctance of individuals to venture outside their comfort zone of routines. He refers to those individuals who are unwilling or unable to make a commitment to change as the vast number of individuals who are: "dying a slow death." Dying a slow death in an organization takes on a variety of connotations that imply that all change must occur "out there" rather than within their own experience. The lessons of systemic thinking illustrate the types of personal commitments that result in systems change. Table one illustrates the differences between traditional thinking and systemic thinking as it relates to large-scale change efforts such as the Navajo Nation Rural Systemic Initiative.

Table 1. Comparisons of Traditional and Systemic Thinking

TRADITIONAL THINKING	SYSTEMIC THINKING
Considers what is not working and typically looks for "victims" to blame.	Describes how components of a system are working and encourages accountability for different results.
Protects the turf and works to maintain the environment.	Constantly seeks to reposition to establish more strategic opportunities.
Invests in those efforts that allow the organization to become larger.	Considers the most effective means of working in a larger context and works to make the organization become lean.
Is comfortable with routines and standard operating procedures	Wants to know where he/she should be next to improve the system.
Describes what is present within the organization that contributes to present outcomes.	Identifies what is missing that would potentially improve the performance of the organization and the larger system.
Takes pride in the activities of the team or organization.	Takes pride in the results that are produced by the team, organization, and system.
Provides attention to the individual members of an organization.	Focuses attention on the vision being pursued by the organization.
Measures efforts against job description.	Measures effectiveness against descriptions of tactics and strategies.
Seeks stability to anchor the organization.	Pursues approaches that allow the individual and organization to become more agile.
Concerned with getting more to make the organization bigger and better.	Wants to "give it away" to build the capacity of the system.

As the process of systemic change unfolds within the structure of the Navajo Nation Rural Systemic Initiative, the guiding force for change is the unique needs of the diverse learners who comprise the rural environments of Navajo schools.

A variety of change agents have made commitments to a collaborative enterprise described by the project. Systemic thinking provides the vehicle to open the doors for purposeful action that leads to the outcomes of the project. As clear and simple purpose is identified, the cultivation of complex and intelligent behaviors is supported among the participants.

Summary

This paper has summarized the key features of the Navajo Nation Rural Systemic Initiative sponsored by the National Science Foundation and implemented by the Division of Dine Education. The project seeks to create a standards-based, student-centered teaching and learning environment in science, mathematics, and technology for a broad cross-section of students in elementary and secondary schools on or near the Navajo Nation. The priorities that have been identified to achieve the vision of the project include six drivers that lead to systemic reform. These six drivers are as follows: student attainment and achievement; closing the gap; curriculum and assessment; policy; resource convergence; and, broad-based support.

The implementation of systemic change can only be attained through the efforts of stakeholders who practice systemic thinking. Thinking in strategic dimensions requires personal change and commitment on the part of stakeholders to consider new options for thinking beyond current issues and concerns. This is the basis for systemic thinking that operates in contrast to traditional thinking that typically endeavors to maintain the status quo. A variety of examples of systemic thinking are provided with contrasting examples of traditional thinking. The intent of this approach is to identify clear and simple purpose that leads to intelligent and complex outcomes.

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PERENNIAL ISSUES AND EMERGING CONCERNS: FOOD FOR THOUGHT FOR THE NEW MILLENNIUM

Rural school personnel may well not have the same experiences in special education as do educators in more urban settings. Therefore, their perceptions about issues and emerging trends may not be consistent with those identified on a regional or national basis. Because of this, a presentation of issues and concerns generated from a series of public hearings in one rural state (West Virginia) has been developed.

In order to generate the information provided in this presentation, the state advisory panel in West Virginia was approached with a suggestion that public hearing sessions associated with each of their eight meetings be held. This would provide a forum within which parents, teachers, administrators and the public could express their views of issues and/or concerns of an ongoing or emerging nature. The advisory panel, named the West Virginia Advisory Council for the Education of Exceptional Children, agreed to support this process and its members felt that this would provide an information base upon which to develop its Annual Report.

Because there is considerable variety in the ways in which individual states meet the mandate for structuring advisory panels, some background information is necessary. The Individuals with Disabilities Education Act (IDEA) requires each state to have an Advisory Panel. The composition of the West Virginia Advisory Council for the Education of Exceptional Children (WVACEEC) is described in State Code 18-20-6. The Council is charged in part with advising policy makers regarding the unmet needs of exceptional children. The Council has adopted a mission which includes influencing the State Board of Education, other public policy makers, such as the Legislature, and West Virginia's citizens in ways that continuously improve educational outcomes for children with exceptionalities. The Council is composed of twelve members appointed by the State Superintendent of Schools. In addition, the Council is geographically representative of the state. Because the state is separated into eight areas called Regional Educational Service Agencies (RESA's), the Council conducts one of its two-day meetings in each region annually. For purposes of collecting information on current or ongoing trends and issues, the Council has scheduled public hearings on both days of these meetings. In addition to the public hearings, typical agendas include topical presentations from local, regional and state education personnel as well ones from other agencies involved in the provision on services to exceptional children. A listing of participants for each year is presented in Appendices A & B.

Having gathered an amazing level of testimony each year, the Council was asked to first reach consensus on the identification of long-standing concerns and then to apply the same process to determine emerging issues worthy of separate recommendations. Each of these two tasks will be explored separately in the following sections.

LONG-STANDING CONCERNS

It is important to note that many of the concerns identified below represent ones addressed in the past by a recommendation(s) in at least one year. It is also important to note that, in many cases, significant progress has been made by local, regional and state education agencies in addressing these concerns. In fact, the very fact that they tend to be perennial issues is an indication of their appropriateness for this category. Finally, it is important to recognize that the following is simply a listing and is not arranged in any hierarchial order:

- Need to increase the amount and variety of training options and services to the autistic population and those who serve them.
- Gifted education services still tend to be described as "programs" rather than being based upon individual student needs.
- Transition planning that addressed Early Intervention to Early Childhood programs as well as school-to-community.
- Improvement of the process of IEP development for both disabled and gifted students.
- Full implementation of IEP's.
- Successful involvment of parents and children in the planning and delivery of their educational services.
- Delivery of related services such as speech and language therapy, physical therapy, occupational therapy, and extended school year services.
- Access to the general education curriculum via inclusion is still a challenge for many school systems.
- Quality transition opportunities for all students is still a challenge in many rural areas of the state.
- Congress has articulated an awareness of its failure to honor the original commitment to pay 40% of the cost of special education. Currently federal funding is no more than 12% via the Individuals with Disabilities Education Act (IDEA).
- A number of school systems are still experiencing a fiscal deficit. In addition, beyond a certain percentage, identification of additional exceptional students creates a penalty situation for some counties.
- The school calendar still does not provide adequate time, flexibility and opportunity to support a comprehensive system of personnel development.

RECOMMENDATIONS

The content of this section was based upon emerging issues identified as a result of testimony requested by the Advisory Council or otherwise received from the public during hearing sessions scheduled at each meeting during the last two years. The intent of the recommendations was to capture key emerging issues in the form of a specific recommendation in a fashion that maximized the potential of existing resources to improve services. Emerging issues were collapsed into discreet categories and resulted in the following:

- **Speech and Language**
  -The Council recommends that, because the shortage of speech and language personnel has resulted in a statewide crisis, the State Board of Education, the WV Department of Education, institutions of higher education and the Legislature collaborate to ensure that an adequate supply of speech pathologists and speech therapy assistants be provided to meet the needs of exceptional students.

- **Delivery of Services**
  -The Council recommends that the current SBE Policy 2419 statements regarding the formation of appropriate instructional groupings and the full implementation of IEP's for exceptional students be reviewed and enforced where necessary.

- **Discipline**
  -The Council recommends that the required procedural safeguards regarding the suspension of students with disabilities be reviewed and enforced as necessary. The development of behavior management processes, which include training on positive behavioral support systems is needed to meet this continuing concern.

- **IEP Process**
  -The Council recommends that the current leadership being provided by the Department of Education in the area of IEP training for all educators continue, with the emphasis shifting from correctly completing forms to improving the process for developing quality IEP's which include appropriate related services.

- **Personnel**
  -The Council recommends that the State Board of Education exert every effort to allow applicants for Department position vacancies to carry at least a portion of their existing seniority into those positions in order to broaden the applicant pool.
  -The Council also recommends that the statutory and regulatory restrictions on the employment and assignment of public school service personnel be examined for their effect on the ability of local school systems to avoid the disruption of services to exceptional students.

- **Continuing Education/Staff Development**
  -The Council recommends that the State Board of Education and Legislature consider revisions to the school calendar that would allow additional time, flexibility and opportunities to meet the training needs of both professional educators and service personnel.

- **Local Administration**
  -The Council recommends that the State Board of Education and State Department of Education develop, and require successful completion of, a formal training component for newly appointed local special education directors.

APPENDIX A
INDIVIDUAL PARTICIPANTS
1996-1997

The following people attended meetings across the state this year. Most of them addressed their concerns during the informal meeting with the public or were included in the meeting agenda.

Name	Representing	County
Richard M. Belcastro	Resource Teacher	Harrison
Brenda Bennett	S.P.E.C.I.A.L.	Hancock
Doris Berns	Kingwood Elementary	Preston
Carolyn Brown Bonds	White Sulphur Elementary	Greenbrier
P.A. Brackenrich	White Sulphur Elementary	Greenbrier
Stephanie Brown	Weir High School	Hancock
Jacqueline Carrington	Board of Education	McDowell
Linda Carter	Parent	Hancock
Bea Cashdollar	Coordinator/Teacher	Hancock
Pam Copeland	Parent/Educator Resource Center	Ritchie
Cindy Corley-Hicks	Director, Special Education	Raleigh
Bob Craig	Family Voices	Marion
Ruth Dailey	Community Integration Work Prog.	Wood
Heather Danielson	Specialized Foster Care Provider	Hancock
George Dayoub	Member, WVDDC	Hancock
Jeanne deLaurier	Concerned Citizen	Greenbrier
Virginia deLaurier	Concerned Citizen	Greenbrier
Raymond Dunleavy	Parent	Kanawha
Jane Elliott	Parent Resource Center	Kanawha
Sherri Epling	Parent/Aide w/Brd. Of Educ.	Raleigh
Debbie Farmer	Family Resource Network	Raleigh
Nancy Ford	Parent	Hancock
Jennifer Forester	Klingberg Center	Monongalia
Millie Gerbo	Parent Coordinator, P.E.R.C.	Hancock
Amber Glass	Parent	Raleigh
Barbara Grady	Parent/Educator Resource Centers	Wood
Jennifer Hardy	New Cumberland Elementary	Hancock
Shell Hinkley	Parent Training Center	Wood
Emily Holswade	WV Advocates	Kanawha
Dr. Maggie Jaynes	Physician, Klingberg Center	Monongalia
Rosemary Jenkins	WV Federation of Teachers	Kanawha
Judy Jozwick	Greenbrier Elementary School	Doddridge
Willadene Kennedy	Parent	Hancock
Mark Kodack	Specialist, Special Education	Raleigh
Tony Laughter	Special Education Specialist	Wood
Ghaski Lee	Board of Education	Raleigh
Sharon Linch	Parent/Educator Resource Center	Wood
Maxwell Linville	Grandparent	Lincoln
Sue Malthy	WVIHY-DOE-OIEP	Harrison
Kevin Maynus	Coalition on Disabilities	Raleigh
Everett (Lew) Maysey III	Parent	Hancock
Dave McChesney	Director, Special Education	Braxton

Judy Kelley Minor	Coordinator, Special Education	Monongalia
Darcy Moorhead	Transition Coordinator	Hancock
Kelli Myers	Westbrook Early Intervention	Wood
Deborah Novotny	Special Education Director	Wetzel
Gilda Parrish	East Dale Elementary School	Marion
Nancy Payne	Special Educ. Specialist	Raleigh
James Piccirillo	Weirton Heights Elementary	Hancock
Terry Poe	Independence Jr. High (Principal)	Raleigh
Jackie Purkey	Governor, CEC	Wood
John D. Riffe	Rehabilitation Center	Kanawha
Ricky San Julian	Board of Education	Harrison
Sandra Sargent	Coordinator, Federal Programs	Cabell
Beverly Shelton	Parent/Educator Resource Center	Wood
Jennifer Sherwood	White Sulphur Elementary	Greenbrier
Sharon Spencer	WV House of Delegates	Kanawha
Lisa Stacy	White Sulphur Elementary	Hancock
Michael Sullivan	West Virginia Graduate College	Kanawha
Michael Swartzmiller	New Cumberland Elementary	Hancock
Ron Thompson	House of Delegates	Raleigh
Melody Waybright	Parent	Harrison
Becky Wible	School Psychologist	Hancock
Carolyn Wilbourn	Speech Pathologist	Harrison
Tom Wilson	WV Special Olympics	Wood
Annette Wright	WVIHY-DOE-OIEP	Harrison

APPENDIX B
INDIVIDUAL PARTICIPANTS
1997-1998

The following people attended meetings across the state in the past year. Most of them provided information or expressed concerns as part of the informal meeting with the public or because they had been included on the meeting agenda.

Name	**Representing**	**County**
Jodie Adams	Teacher	Ritchie
Phil Akers	Southern Mountains Head Start	McDowell
Rita Alkire	Parent	Lewis
Natala Auvil	Lewis County Schools	Lewis
Susan Barnes	RESA I, Director Sp.Ed.	Raleigh
Jackie Blankenship	Speech Pathologist	Lincoln
Margaret Bovee	Special Education Teacher	Greenbrier
Tila Boyce	Hodgesville Elementary	Upshur
Barbara Brazeau	WVDE	Kanawha
G. Ronald Brown	Director of Special Education	Berkeley
Nancy Buckland	Parent/Educator Resource Ctr.	McDowell
Nora Burkhammer	Lewis County High School	Lewis
Linda Campbell	Teacher	Ritchie
Susan Carpenter	WVPTI/Parent Advisory Council	Nicholas

Jacqueline Carrington	Specialist, Board of Education	McDowell
Billy Christian	Ranger Elementary	Lincoln
Leta Grace Cline	Sp.Ed. Evaluator, BOE	McDowell
Pam Copeland	Parent/Educator Resource Ctr.	Ritchie
Debbie Cortellesi	Sp.Ed. Evaluator, BOE	McDowell
Willa Dambro	Parent/Educator Resource Ctr	Berkeley
Helen Derico	Lewis County Schools	Lewis
Paul Derico	Principal, Peterson School	Lewis
Gabe Devono	Lewis County Schools	Lewis
Thelma Dietrich	Parent	Lewis
Norma Harper Doane	Sp.Ed. Coordinator, RESA V	Wood
David Dotson	Hamlin High School	Lincoln
Brenda Ellyson	Lewis County High School	Lewis
Charles Fritsch	Assistant Superintendent	Berkeley
Sharon Hardway	Teacher	Ritchie
Annetta Hatfield	Board of Education, Special Ed.	Lincoln
Bill & Nancy Harmison	Parents	Berkeley
Constance Harvey	Parent	Kanawha
Clinton Henry	Coordinator, Sp.Ed.	McDowell
Pamela Hotsinpiller	Parent/Educator Resource Ctr	Harrison
Carol Hsu	Parent	Morgan
Thomas Iles	Special Education Director	Greenbrier
Glenna Jennings	Parent	Wyoming
Sharon Jerden	Lewis County High School	Lewis
Elizabeth Johnson	Special Education Specialist	Greenbrier
Joan Jost	Special Education Teacher	Greenbrier
Hilda Kerns	Harrison County Schools	Harrison
Debbie King	Parent/Educator Resource Ctr.	McDowell
Denton King	Lewis County Schools	Lewis
Lucinda Lambert	Southwestern Community Action	Lincoln
Mary Lambert	Southern Mountains Head Start	McDowell
Susan Lattimer	Coordinator, WVDOE	Kanawha
Bill Linville	Board of Education	Lincoln
Maxwell Linville	Grandparent	Lincoln
Mary Dawn Lockhart	Southern Mountains Head Start	McDowell
Mary Lough	Parent/Educator Resource Ctr.	Lewis
Patricia Lucas	Behavior Disorder Teacher	Berkeley
Debbie Lusk	Sp.Ed. Teacher	Wyoming
Sharon Maggio	Parent	Morgan
Donna Martin	Board of Education	Lincoln
Charles McCann	County Commission	Lincoln
G.E. McClung	Superintendent of Schools	Ritchie
Teresa McDonough	Parent	Kanawha
Marie McGannon	Lewis County Schools	Lewis
Warren McGraw	Prosecuting Attorney	Wyoming
Doris McIntyre	Parent	Harrison
Sylvia McNeish	Principal, Lewis County High	Lewis
Kelly Merritt	Ranger Elementary	Lincoln
Norma Mertz	Lewis County High School	Lewis
Ardyce Morgan	Lewis County Schools	Lewis
Beverly Mullins	Parent Resource Center	Kanawha

Linda Nelson	Sr. Speech-Language Pathologist	Greenbrier
Marilyn Nichols	Parent Resource Center	Kanawha
Jewell Parsons	Parent Consultant/WVPTI	Fayette
Dale Penwell	RESA VIII Sp.Ed. Coordinator	Berkeley
Leann Piercy-McMillion	Special Educ. Teacher	Greenbrier
Roscoe Plumley	President, Board of Education	Raleigh
Julia Pothoof	Grandparent	Berkeley
Jo Ann Powell	Parent	Pleasants
Jackie Purkey	Educator	Wood
Cheryl Rahming	Lewis County High School	Lewis
J.J. Rakes	Hamlin High School	Lincoln
Mary Ann Shires	Seneca	Greenbrier
Robert T. Simpson	Lewis County High School	Lewis
Rick Simon	Tri-County Health Clinic	Upshur
Jim Smiley	RESA VII	Marion
Marlene Smith	Lewis County High School	Lewis
LaDonna Smith	Southwestern Community Action	Lincoln
Ron & Roberta Smith	Parents	Harrison
Darlene Smithson	Lewis County High School	Lewis
Barbara Spaur	Lewis County High School	Lewis
Sayrann Stalnaker	Lewis County High School	Lewis
Carolyn Stover	Parent	Wood
Karolyn Stump	Administrator, Sp.Ed.	Wyoming
Terri Stutler	Parent/Adv Council	Harrison
Pricilla Suan	Lewis County High School	Lewis
David Sutherland	Citizen	Hampshire
Carol Tamara	Parent/Educator Resource Ctr.	Berkeley
Susie Thayer	Parent	Lewis
Kathryn Walker	RESA IV	Nicholas
Ellen Wallace	Board of Education	McDowell
Veronica Washington	West Virginia Advocates	Kanawha
Melody Waybright	Parent/Educator Resource Ctr.	Harrison
David B. Weekley	Sp.Ed. Director	Ritchie
Becky Wilson	Member, Board of Education	Jefferson
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THE IDEA 1997 ACCOMMODATION, MODIFICATION PLANS AND RELATED SERVICES COMPLIANCE REQUIREMENTS FOR RURAL SCHOOLS ACCORDING TO RECENT COURT DECISIONS

Rural schools do not receive special compliance exemptions under the Individuals with Disabilities Education Act (IDEA). The purpose of the IDEA is to

> assure that all children with disabilities have available to them . . . a free appropriate public education which emphasizes special education and related services designed to meet their unique needs, to assure that the rights of children with disabilities and their parents or guardians are protected, to assist states and localities to provide the education of all children with disabilities, and to assess and assure the effectiveness of efforts to educate children with disabilities. (IDEA, 20 U.S.C. § 1400(c))

The purpose of the IDEA was to provide federal funding assistance to states in meeting the educational needs of students with disabilities. However, the U.S. Supreme Court interpreted the IDEA in much broader terms than the enactment of a funding statute. The Court, in *Honig v. Doe*, held that disabled students hold enforceable substantive rights to public education. Importantly, the Court conditioned federal financial assistance upon states' compliance with substantive and procedural goals of the Act (*Honig v. Doe*, 1988, p. 597).

Rural schools must meet the substantive and procedural goals of the IDEA. Therefore, rural schools would be well served in knowing the particularized goal requirements for each disabled student in their district. Moreover, individual state qualitative standards for the provision of special education and related services to disabled students apply to each school district, or local education agency (LEA), within a given state. School districts do not have equal resources with which to meet those qualitative standards. Compliance with state qualitative standards may be more problematic in rural schools that tend to have limited funding and resources for meeting the educational needs of disabled students.

Court decisions involving the free and appropriate education (FAPE) of disabled students provide guidance for LEA decision-makers on the matter. However, initial guidance is first found in the federal statute and particular state statutes.

Rural school organizations and associations within each state should monitor their own state's special education agency. The IDEA requires that 75% of the federal funds received by the states be directed to the local schools. 25% may be used at the state level. Therefore, three-fourths of the federal funds should flow to the local school districts. The amount of flow-through funds given to a LEA is in proportion to the district's contribution to the state total of students in special education.

The size and efficiency of a state's agency beauracracy may affect the amount of funds and resources available to the state's LEAs. Those effects become magnified for rural schools.

State agencies may set aside their 25% share of the federal funds for administration and supervision, direct and supportive services for students with disabilities, and monitoring and complaint investigation (IDEA Regulations, 34 C.F.R. § 300.370(a)). However, states may only use 5% of the 25% of federal funds for administrative purposes. Those administrative purposes may include technical assistance to local educational agencies, administering the state plan, approval and supervision of local activities, and leadership activities and consultative services (IDEA Regulations, 34 C.F.R. § 300.621). The actual dollar amount of that 5% that may be used for administrative purposes has been capped by the IDEA Amendments of 1997. Increases are tied to the inflation rate or the increase in federal expenditures whichever is less. If inflation is lower than the percentage increase in federal appropriations, states are required to spend the difference on improvements in services to students with disabilities.

Rural school organizations would benefit from oversight efforts that monitor for state agency level compliance of federal regulations for funding distribution and administrative purpose of operations. Lobbying efforts at the state level for efficient and effective agency support of LEAs will assist rural schools maximize the educational services those schools provide their disabled students.

Rural schools will be well served to scrutinize the compliance requirements for each individual disabled student. The IDEA Amendments of 1997 did not change the definition of a child with a disability. However, the definition has been relaxed for children ages 5 through 9. The LEA is no longer required to determine a specific disability for a child between those ages. That was already true for children between the ages of 3 and 5. The state agency and the LEA now have discretion to include 5-9-year-olds who are "experiencing developmental delays" in physical, cognitive, communication, social or emotional, or adaptive development who, by reason thereof, need special education and related services. (Pub. L. 105-17, § 602(3), 111 Stat. 37 (1997).) The Amendment later provides that "nothing in this Act requires that children be *classified* by their disability" so long as the student meets the definition of a child with a disability. (Pub. L. 105-17, § 612(a)(3)(B), 111 Stat. 37 (1997).) Therefore, the LEA is not required to label the student as belonging to a particular disability group.

A program of special education and related services is required under IDEA for all eligible students with disabilities between the ages of 3 and 21. Moreover, states are required to identify and evaluate children from birth to age 21. That is true even if the state does not provide educational services to students with disabilities in the 3-to-5 and 18-to-21 age groups (IDEA regulations, 34 C.F.R. § 300.300, comment 3). However, the duty to provide special education to qualified students with disabilities is absolute between the ages of 6 and 17 (Weber, 1992). States that do not require an education for students with disabilities between ages 3 to 5 and 18 to 21 are not required to educate students in those age groups (IDEA, 20 U.S.C. § 1412(2)(B)). Rural school administrators should know the specific education age requirements in their respective states.

The courts have addressed the issue of when a school's obligation to educate a disabled student ends. The school's obligation to a special education student ends when the student (1) graduates with a diploma, (2) successfully completes an appropriate individualized education program (IEP), or (3) voluntarily drops out of school. (*Wexler v. Westfield*, 1986). A caveat: the graduation cannot be mere pretext for terminating the school district's obligation, however, or the district can be required to provide compensatory education such as educational services beyond the age of 21 (*Helms v. Independent School District #3*, 1985).

The rural school should ensure that only students who meet the requirements of a statutory category of disability qualify for educational services. Those categories are:

> autism, deaf-blindness, deafness, hearing impairment, mental retardation, multiple disabilities, orthopedic impairments, other health impairment, emotional disturbance, specific learning disability, speech or language impairment, traumatic brain injury, and visual impairment, including blindness. (20 U.S.C. § 1401(a))

The regulations defining the categories can be found at 34 C.F.R. § 300.7(a)(1)-(b)(13). Attention Deficit Hyperactivity Disorder (ADHD) is not a separate category. The Department of

Education (DOE) has recognized ADHD as criteria of eligibility for special education services under the categories of learning disability, serious emotional disturbance, or other health impairment in a joint policy memo. (Joint Policy Memo, 1991) It should also be noted that students with ADHD might also be eligible for services under Section 504 of the Rehabilitation Act of 1973. (Yell, 1998)

Rural school districts must ensure that provisions contained in the IDEA are met in order to provide a free appropriate education for all qualifying students with disabilities. This provision of zero rejection for qualifying students was addressed in the U.S. Court of Appeals for the First Circuit which held that public education is to be provided to all students with educational disabilities, unconditionally and without exception (*Timothy W. v. Rochester, New Hampshire, School District,* 1989).

The IDEA requires that states must assure that all students with disabilities (birth to age 21) who are in need of special education and related services or are suspected of having disabilities and in need of special education are identified, located, and evaluated. (IDEA Regulations, 34 C.F.R. § 300.220). The federal government allows the states to develop their own child find systems (IDEA, 20 U.S.C. § 1414(a)(1)(A)). Rural school organizations should ensure that their interests are represented in the development of and changes to child find policies promulgated by their state agencies.

The IDEA requires that state policies assure all students with disabilities the right to a FAPE. States retain the authority to set standards for FAPE. However, those standards must meet the federal threshold requirements of the IDEA definition of special education which is "specially designed instruction, at no charge to the parents or guardians, to meet the unique needs of a child with a disability" (IDEA, 20 U.S.C. § 1404(a)(16). Those standards must also include the provision of related services, which are any developmental, corrective, or supportive services that students need to benefit from special education (IDEA, 20 U.S.C. § 1404(a)(17)).

State special education standards greatly impact rural schools. Rural schools, as with all public schools, must provide special education and related services to students free of charge. Schools may only collect fees from parents of students with disabilities that are also collected from parents of students without disabilities. If the school district places a student out of the district in order to meet state standards, the home school district remains responsible for the costs of that placement.

State standards may exceed the minimum level of educational services required pursuant to the IDEA. For example, a state may require schools to provide a FAPE that will "assure a student's maximum possible development" (Massachusetts General Law Annotated, 1978). Compliance with such standards imposed by a state may place a heavy burden on the funds and resources of rural school districts. Therefore, rural school organizations must ensure their interests are represented at the state level when special education standards are adopted.

The purpose of federal funding for special education is not to supplant state funding of the program. The IDEA federal funds are required to be used a supplement to state funds for providing special education and related services. The IDEA specifically places supervision of each state's special education program under each state education agency (SEA). Therefore, the state is ultimately responsible for ensuring the appropriate use of state and federal special education funding. School districts are granted authority under the IDEA to use other sources of funding to pay for special education services. (IDEA Regulations, 34 C.F.R. § 300.600(c)).

The 1997 Amendments to the IDEA included a major change in funding special education. The funding formula remains based on the child count until federal appropriations reach $4.9 billion. IDEA funds above $4.9 billion are to be allocated based on a population-based formula. The formula will include an adjustment for poverty rates. The adjustment for excess appropriations will be based on the states population (85%) and poverty level (15%). There is, however a cap and floor limit to the excess appropriation funding. A state will not receive more than 1.5% above the federal funding received for the previous year, nor will a state receive less federal funds than was received for fiscal year 1997. (Yell, 1998) Rural school organizations should include the funding changes of the 1997 Amendments in their special education and related services budget projections for each year.

A major change in the 1997 Amendments that is likely to involve more litigation in special education cases regards compliance with the new LRE setting. In the prior version of the statue a student's IEP had to state to what extent the child would be able to participate in regular educational programs. The basic preference for education of children with and without disabilities in the same educational setting remains in place. A presumption that the placement will provide education with nondisabled students has been created, however, by the new requirements in the IEP that a justification must be given if the child is not educated with nondisabled students (Pub. L. 105-17 § 614(d)(1)(A)(iv)).

The IDEA requires all schools to have a continuum of alternative placement options to meet the needs of students with disabilities. The regulations state:

> (a) Each [school district] shall ensure that a continuum of alternative placements is available to meet the needs of children with disabilities for special education and related services
> (b) The continuum required . . . must:
> (1) Include the alternative placements . . . (instruction in regular classes, special classes, special schools, home instruction, and instruction in hospitals and institutions); and
> (2) Make provision for supplementary services (such as resource room or itinerant instruction) to be provided in conjunction with regular class placement. (IDEA Regulations, 34 C.F.R. § 300.551)

The purpose of the continuum is to allow school personnel to choose from a number of options in determining the most appropriate LRE for the student. If a rural school lacks the resources to comply with the IDEA continuum requirement, the rural school may fill the requirements through alternative placements such as consortium type arrangements. A rural school may find it necessary to send the student to another school (public or private) that provides the needed placement. The sending school retains financial responsibility for the disabled student's education.

It is important for rural school districts to note that the only qualitative standard by the IDEA for providing special education and related services is that standard required by the district's SEA. The main focus of the courts has been to review the procedural protection rights of students under the IDEA. Courts have been reluctant to conduct extensive reviews of challenged IEPs.

The posture of the courts regarding the qualitative standard for the provision of special education and related services is reflected in the *Rowley* decision. In *Rowley*, the parents of a hearing impaired student argued that the school district should provide a sign language interpreter for their daughter. Their argument was based upon the reasoning that the IDEA required the district to maximize their daughter's educational potential.

The U.S. Supreme Court reviewed the legislative history of the IDEA and found no requirement that public schools maximize the potential of each student with a disability. The opportunities provided to each student by their school varied from student to student. The primary purpose of the IDEA was to guarantee access to students with disabilities to allow them to meaningfully benefit from public education. The IDEA protected the right to access by means of its procedural protections, including the annual IEP meetings and review process. Courts limit their inquiry to whether the school has complied with IDEA procedural protections, and whether the IEP was reasonably calculated to enable the student to receive educational benefits (*Bd. of Educ. v. Rowley*, 1982).

A problem that occurs in rural school special education programs is one that involves students moving into the district with educational needs the school is unable to provide. This problem is represented in *Poolaw v. Bishop*. In *Poolaw*, a 13-year-old student with profound deafness moved from Idaho to a small town in Arizona. The Arizona district relied, in part, on the student's records from Idaho in making a placement decision. An identified education requirement in the student's IEP was a full-day immersion program in American sign language. The Arizona district made the determination that the student should be placed in the Arizona School for the Deaf and Blind (ASDB). The ASDB is a residential facility located 280 miles away from the Arizona district.

The student's parents argued two points. (1) The placement selected by the district failed to consider the continuum of educational placements required by the IDEA; and, (2) the placement failed to comply with IDEA's mainstreaming requirement. A hearing officer agreed with the parents, as did the Arizona Department of Education (ADE) upon the school's appeal of the hearing officer's ruling.

The U.S. Court of Appeals, Ninth Circuit, overturned the administrative decisions of the hearing officer and the ADE. The Court held that the Arizona school district relied appropriately on the student's Idaho IEP in reaching its decision. The district had considered alternative placements and reasonably concluded that mainstreaming did not allow the student to receive educational benefits. The Court agreed that the student needed to acquire greater communication skills before the student could receive educational benefits in a regular classroom. The Court held that the ASDB setting was appropriate under IDEA regulations at 34 CFR § 300.522(a)(3) because it was the closest facility at which the student could obtain the services he required. (*Poolaw v. Bishop*, 1995).

Another case, *Yankton School dist. v. Schramm*, presents a caveat to schools who elect to provide special accommodations and related services not included in a student's IEP. In *Schramm*, a student with cerebral palsy and visual impairments was only able to walk slowly with a walker or used a wheelchair for mobility. The student could not function independently in many aspect of personal life. The student was an "A" student and participated in numerous school activities in spite of her disabilities.

The district stated its intentions to dismiss the student from special education prior to the student entering the ninth grade. The school's decision was based on the belief that the student no longer required special education services under the IDEA. The hearing officer found that the student achieved her good grades and participated in the school activities because of the special accommodations and related services provided by the school.

The school district appealed to the U.S. Court of Appeals, Eighth Circuit. The Court ruled that the student's grades would be adversely affected if the school did not continue to provide the accommodations and related services in question. Moreover, the Court found that the district had failed to incorporate the services it was providing the student into its written IEP and her need for the related services had not ended. The Court held that the student would be entitled to receive transition services from the school district until the age of 21 or her graduation date (*Yankton School Dist. v. Schramm*, 1996).

Courts have shown they will take a school district's resources into consideration in making a special education or related services ruling. The Eighth Circuit Court held that an Iowa student who had suffered a spinal cord injury was entitled to continuous one-on-one nursing services as related services under the IDEA because the school district's nurse could provide the services (*Cedar Rapids Community School dist. v. Garret F.*, 1997).

The Sixth Circuit Court held that the hiring of a full time licensed practical nurse was inherently burdensome to the school district because the individual performing the services (frequent suctioning of the student's tracheotomy) would have to be available at all times. The Court held the services were an excluded medical service under the IDEA (*Neely v. Rutherford County Schools*, 1995.) Similarly, in a ruling from the Eastern District of Pennsylvania, the Court held that a factor a school district may take into account in placement of a disabled student is the impact the proposed placement would have on limited educational and financial resources of the district (*Cheltenham School Dist. v. Joel P. by Suzanne P.*, 1996).

The purpose of the IDEA applies to all public schools receiving federal funds in the United States. Rural school districts must ensure that all students within in their districts have available to them a FAPE which emphasizes special education and related services designed to meet their unique needs (IDEA, 20 U.S.C. § 1400(c)). In order for rural school districts to provide a FAPE to students with disabilities, rural school districts must ensure their interest are represented when their SEA promulgates special education policy for their state. Particularly, the qualitative standard adopted by the SEA must be a standard with which rural schools can comply as well as urban schools in the state.

Rural school districts must also ensure their districts receive the mandated funding allotment required by the IDEA. Rural school organizations should be involved in lobbying for appropriate funding decisions at the SEA level as well. Rural schools must be aware of the major funding changes that may impact their districts as a result of the 1997 Amendments to the IDEA. The districts must ensure their interests are represented regarding accurate accounting of state's population and poverty level - the criteria used in funding formula adjustments.

Finally, it is important rural school districts to monitor case law regarding special education and related services standards applied by the courts for schools in similar conditions. Rural schools must meet the qualitative standard of special education set by their SEA while carefully scrutinizing educational and related services offerings that are not in the students IEP. Providing a FAPE in any school setting will remain a dynamic challenge in special education in the United States. The impact on rural schools in meeting that challenge may be attenuated due to the limitations on funding and resources commonly found in those districts.

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MULTICULTURAL EDUCATION

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ETHNIC AND CULTURE DIVERSITY IN RURAL DEAF EDUCATION PROGRAMS IN NEW MEXICO

The state of New Mexico currently certifies all teachers of deaf and hard of hearing children under a generalist special education licensure. This generalist special education certification allows the state of New Mexico to hire anyone with a Special Education degree to teach any child in special education regardless of disability. This works well in supply the demand for teachers in rural areas. However, because the education of children who are deaf or hard of hearing is a uniquely specialized field, this generalist special education certification may not be appropriate for teachers serving the need of children who are deaf or hard of hearing. Little information is known about the training and skill levels of teachers serving rural deaf and hard of hearing children in New Mexico.

In addition to the lack of information regarding skill levels of teachers serving deaf and hard of hearing children in New Mexico, there is little information about ethnicity of the teachers who are serving deaf and hard of hearing children in this state (Maestas, 1999). Nationally, White non-Hispanic teachers of the deaf tend to comprise about 91% of the teachers of the deaf and hard of hearing (Andrews and Jordan, 1993) It has been suggested that teachers of Anglo origins tend to use less cultural emphasis in their teaching methods (Lummer, 1999). This may be distressing as cultural emphasis has recently been established as an important aspect of curricula for instruction of deaf and hard of hearing children (Christensen & Delgado, 1993). Further, it has been established that non-English speaking children are often over-referred for other disabilities such as learning disabilities, mental retardation and emotional/behavioral disabilities (Moores, 1997).

In addition to ethnic minority, Deaf culture issues must be addressed. Children in rural areas have the same need as deaf and hard of hearing children in large public schools. In fact they may be more isolated due to the smaller number of deaf adults in rural communities. Andrews and Jordan (1993) reported that only seven percent of teachers for the deaf and hard of hearing are deaf or hard of hearing themselves. In addition, a larger percentage of children in rural areas have hearing parents as most deaf adults prefer to live and raise their children in metropolitan areas where there is a better chance of meeting and socializing with other Deaf community members. Therefore, deaf children in rural areas may have parents who are completely unaware of the Deaf Community and other isolating factors regarding their children's deafness.

Thus, the purpose of this investigation was twofold. First, the investigator needed to ascertain characteristics of the deaf and hard of hearing children being served in rural public schools in New Mexico. Secondly, the characteristics of the teachers serving these children needed to be investigated. The results of this investigation would provide teacher training institutions with data which would allow them to focus training in areas of weakness with in the state. The results would once disseminated would allow school districts the opportunity to help teachers with professional development. And finally, results, if indicative of shortages of skilled teachers for the deaf and hard of hearing, would suggest to the State Department of Education in New Mexico that changes are required in order to meet the needs of deaf and hard of hearing children in rural New Mexico.

METHODS

This project investigated the types of services available to children who are deaf and hard of hearing in rural New Mexico. Information obtained through the investigation also provided information regarding the needs of rural programs serving deaf and hard of hearing children.

The State Department of Education Report for the 1997-1998 school year reported 417 deaf and hard of hearing school-age children being served by 50 public schools in New Mexico. Of the 417 children, 334 were reported to be hard of hearing and 83 were reported to be deaf.

Questionnaires

Fifty public schools serving deaf and hard of hearing children were surveyed via mailed out questionnaires. Questionnaires for the survey were developed in two sets. The first set of questions related to characteristics of students and academic placement. The second set of questions related to characteristics of the teachers serving the deaf and hard of hearing children.

Student-Related Questions. Student-related questions consisted of requests for number of students served by the teacher, hearing status (deaf or hard of hearing) of those students, grade level, language of home environment, parental hearing status, use of sign language in the home, communication mode used in the classroom, placement (inclusion) information, interpreter information, use of assistive listening devices, and ethnic group.

Teacher-Related Questions. Teacher-related questions consisted of requests for information regarding college degree(s), college degree major, teaching certification, national licensure, professional associations, years experience, hearing status, and ethnic group.

Procedures

Surveys were developed and protocol were followed for use of human subjects in research. Permission for research was granted by the Institutional Review Board for the survey. Surveys were sent to the special directors of each of the 50 school districts. Special education directors were asked to distribute the questionnaires to teachers in charge of educational plans for children who were deaf or hard of hearing. Teachers were requested through a cover letter to fill out the information regarding students and themselves and to return the questionnaire in the enclosed business reply envelop.

Responses were recorded into a computer database on CRUNCH4 software (CRUNCH, 1992). Data were analyzed using descriptive statistics.

RESULTS

In order to determine what type of services rural New Mexican deaf and hard of hearing children are receiving, 50 public schools were surveyed with the following results. Forty-six percent of returned forms were from teachers who provided services to deaf children and 54% of the respondents were teachers who provided services to hard of hearing children. Half of the teachers' sources for information on their pupil(s) hearing capabilities came from diagnostic evaluation reports while the other half came from word of mouth sources such as parents, speech language pathologists, interpreters and supervisors. Thirty-seven percent of the students served were in elementary schools 36% were served in middle schools and 37% were served in high schools.

Student Characteristics

Reports of home language of the children served indicated that 78% of the children's home language was English, 19% was Spanish, and 2% was American Sign Language (ASL). The parental hearing status question revealed that 13% of the families had hearing loss in at least one parent. Fifty-eight percent of the parents of children who were deaf were reported to use sign language at home albeit in limited amounts for some families. Only 10% of the parents of children who were hard of hearing used any sign language at home.

Academic Placement. Information regarding the academic setting was elicited via the questionnaire Communication mode information was requested for conversation and instruction purposes. Findings indicate that speech was used in 56% of the students served, ASL was used for 18% of the students, Total Communication was used for 13 % of the students, and Signed English was used for 13% of the students.

For placement information results indicate that 11% of the children were educated in self-contained classrooms for the deaf and hard of hearing. Twenty-seven percent of the children were self-contained in a Special Education classroom; 25% of those children had interpreters. Twenty-two percent of the children were partially mainstreamed; 87% of these students had interpreters. Forty percent of the students were fully mainstreamed with 66% having interpreters. Eight-two percent of the children who were deaf used amplification either in the form of hearing aids or FM units. Thirty percent of the children who were hard of hearing used some form of amplification either hearing aids or FM units.

Student ethnicity was also requested through the questionnaire. Results indicated that 38% of the students were Hispanic, 51% were Anglo, 2 % were American Indian, and 8% were unreported.

Teacher Characteristics

Fifty percent of the teachers serving deaf and hard of hearing children had at least a master's degree. Fifty percent of the teachers surveys had only bachelor's degrees. Only six percent of the teachers serving deaf and hard of hearing children had degrees in deaf education. Thirty-one percent had degrees in Special Education. Six percent had degrees in Communication Disorders. Fifty-seven percent had degrees in other fields. Fifty percent of the teachers had Special Education teaching certificates. Fifty percent of the teachers had teaching certification in areas other than special education. No teacher reported to have specific deaf education certification from any state. Twenty-five percent reported to have national licensure in a professional teaching field such as Council for Exceptional Children or Council for the Education of the Deaf. Only twenty -five percent reported to have memberships in professional organizations. The mean number of years teaching experience was 15 with a range from 2 years to 38 years. One hundred percent of the respondents were hearing. Ninety-three percent of the teachers were Anglo and 7% were Hispanic.

DISCUSSION AND CONCLUSIONS

This project surveyed teachers of deaf and hard of hearing school children in rural New Mexico. The purpose of the study was to investigate the services provided to these children and to ascertain characteristics of the children and their teachers. Information from the study should provide the teacher training programs with information regarding the need for teachers and professional growth programs for the state of New Mexico.

The results revealed that only about 50% of the teachers serving deaf and hard of hearing children have professional training in the area of special education. Furthermore, only 6% of the teachers had specific degrees in deaf education. New Mexico licenses teachers for the deaf under a general Special Education certificate. A generalist special education certification allows more school districts to hire from a larger pool for children being served under IDEA. Therefore, although a teacher may be deaf education trained his or her certification never indicates training in Deaf Education. The negative aspect of that is any teacher with special education certification may teacher deaf and hard of hearing children in New Mexico. For that reason this survey asked for information regarding specific college degree and major. It is of great concern that the majority of teachers serving children with hearing loss are not trained in this very special area. Seventy percent of the states in the US require a separate certification, different from Special Education, for deaf educators (Chinn, 1999). Deaf education is considered by most states as a very specialized field usually requiring a master's degree for national licensure. This investigation found that 50% of the teachers surveyed had only Bachelor's degrees and a only one of them in Deaf Education.

In addition to training concerns, the ethnic distribution of teachers for the deaf and hard of hearing is different compared to the population they serve. In this study 7% of the teachers were Hispanic, whereas around 40% of the children served were of Hispanic ethnic origin. Multicultural focus has been mandated for deaf education curricula. According to Lummer (1999), Anglo teachers tend to place less emphasis on culture education. This suggests that the children in New Mexico may not be served as appropriated as suggested by federal law.

Finally, results of the survey portion that addressed characteristics and academic placement for the children referred to in this survey. The survey respondents were disproportionate as to the percentage of children who were deaf as compared to those who were hard of hearing. Specifically, the state of New Mexico statistics suggests a deaf/hard of hearing ratio of 20%/80%. However, survey respondents suggest a ratio of 46%/54%. It is likely that the differences herein are due to some surveys not being returned to the investigator.

The majority of children served in this study were communicated with via speech mode. This majority was nearly the same as the percentage of hard of hearing children suggesting that hard of hearing children are spoken to and speak while most deaf children are using some form of sing system. The majority of children (62%) are also mainstreamed, of these 66% (all deaf) use interpreters in the inclusion setting. This further supports that sign language is being used where needed. One should be cautioned however that many hard of hearing children can do and do well academically and socially when they communicate via a sign mode.

Only about 50% of the children reportedly used some form of amplification. Considering that the majority of these children are hard of hearing, they would probably benefit greatly from the use of amplification. Therefore, this study suggests the need to provide the teachers of these children with some sort of inservice regarding the use of and trouble shooting of hearing aids and FM units in classrooms for the deaf and hard of hearing.

In conclusion, results of this study indicate that for the most part, teachers in New Mexico are not specifically trained to work in the field of deaf education, yet many are doing just that. The concern is that Deaf Education is a specialized field which usually requires a Master's degree to acquire enough knowledge to work in with children with hearing loss. These children have special communication needs and language delay which affect reading, writing and other academic areas. Further, ethnic differences suggest that teachers may not be familiar with the culture of the indigenous population and Hispanic culture so prevalent in the Southwest. Without a solid background in multicultural aspects of deafness, a teacher may not provide enough cultural focus in the education process for these multicultural deaf and hard of hearing children. In short, New Mexican children who are deaf and hard of hearing may not be receiving adequate services.

Results of this study suggest that it may be appropriate for the state of New Mexico to move to a specialized certification for deaf education separate from special education. This change would ensure that children in rural New Mexico are served more appropriately.

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PROJECT LISTOS: A BILINGUAL SPECIAL EDUCATION PROGRAM

Providing services to the Native American populations has been a needed service in the United States for many years. There are approximately 1.4 million Native Americans living on rural reservations, with approximately 400,000 of these Native Americans being of school age. Additionally, the current drop out rate of Native American students is approximately 36% (Lewis, Bennet de Marrais, & Prater; 1998). These figures support the need for highly qualified educators serving this unique and special population. Ideally, graduate level educators with specific training in bilingual education is needed for this population of students. Although this need is understood, it is a challenge to successfully staff educators with this level of training and expertise in the tribal schools on the reservations. This challenge primarily stems from the remoteness of the reservations. Many teachers who are teaching on the reservations do not have reasonable access to a university of which they could further their education and training to obtain a graduate teaching degree. This situation in turn causes teachers on rural reservations to have minimal qualifications to match the needs of the student and family populations of which they are serving. In order to effectively teach Native American students, teachers need the appropriate preservice training to prepare them for their positions.

Teacher preparation programs must be structured to meet the needs of the rural teachers working with the Native American population. In order to do this university programs must reach out to these areas and offer courses to this group of educators. Many of the reservations do not have high technology to offer satelite courses and therefore, universities are forced to find other means to work with these teachers who want and require additional training (Trevelyan, 1996).

This training need becomes even more evident when you consider the special needs of Native American students with disabilities. Therefore, there is a critical need for bilingual special education personnel and programs (French & Rodriguez ; 1998). In response to this critical need for professionals with both special and bilingual education skills, Project LISTOS (Language Interface for Special Teachers of Our Students) was developed at the University of Texas @ El Paso.

Project LISTOS is in its third year of operation. It has been providing preservice training to teachers of the El Paso, Texas area of which there is a large population of individuals who are Hispanic. This project has also provided training to teachers on two Apache Reservations one of which is located in San Carlos, Arizona and the other in Mescalero, New Mexico. Through this preservice project, participants of the project (teachers) have focused on developing skills for working more effectively with linguistically and culturally varied students in special education programs. This graduate program was designed to recruit and train graduate level teachers to work with students who are experiencing difficulty in school and who have or might have a disability. The program was developed to meet the needs of teachers who have traditionally experienced difficulty in working with this group of students.

Project LISTOS has a common philosophy that states there are general strategies that can be used to help those students with disabilities who come from culturally and linguistically diverse (CLD) backgrounds. Within the scope of this project, specific strategies for teaching CLD students are taught to teachers and then through a field-based experience approach, teachers have opportunities to apply the teaching strategies within various teaching situations. Since the strategies are global, they are effective within a variety of populations, regardless of a student's language or ethnic background. Therefore, Anglo, Hispanic, Apache teachers are taught similar teaching principles to use to assist the students for whom they teach.

Two groups of participants were selected to work on this personnel preparation project. The groups consisted of two neighboring Apache Reservations and several rural and urban school districts serving Hispanic students. The teachers on the Apache Reservation focused on developing good teaching strategies that are appropriate for their Apache students while the teachers within the El Paso region focused on developing effective teaching strategies for the students within the area schools which included predominately Hispanic students. Several times throughout each of the project years all of the teachers from both groups met together to discuss commonalties and differences amongst their teaching practices of students in their classrooms and schools.

One major activity and accomplishment of this project was the opportunity provided to all project participants to attend two national training conferences. The cohort of participants attended the National Association for Bilingual Education (NABE) Conference in the Spring of 1997 and also attended a four day training conference from the BUENO Center of the University of Colorado in the Fall of 1997. Throughout both of these sessions, the cohort was able to discuss together strategies that have been supported by national scholars.

A variety of trials and tribulations have been encountered by this project over the past two years of operations. Project personnel have addressed such concerns as: identifying appropriate methods for gaining tribal support from the Apache communities for project activities; overcoming difficulties of long distance learning; providing preservice training to remote and isolated rural areas, and developing courses which specifically meet the needs of the Apache student. Project LISTOS has developed many innovative practices that can assist higher education personnel when dealing with rural communities and a diversified group of graduate students.

Project LISTOS, now in its third and final year of funding, intends to train and graduate over fifty master level teachers with specific skills in bilingual special education. The University of Texas at El Paso intends to institutionalize the courses and the degree track allowing for this degree to continue to be available to students in the future years.

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CROSS CULTURAL IMAGES: THE ETSU/NAU SPECIAL PHOTOGRAPHY PROJECT

Parents and professionals commonly overlook the recreational and avocational needs of handicapped children. Handicapped children have great needs and many persons understandably focus on their academic and social needs, as well as their needs related to activities of daily living. These curricular areas are certainly important. But, recreation is also a significant part of a full and rich life. Recreational pursuits bring meaning to life, add variety to daily activities, and provide appropriate outlets for leisure time. Shannon (1985) found that a large number of handicapped children and adults spent most of their leisure time watching television and or listening to music. In many cases, these activities were done alone. Handicapped persons were socially isolated and often lacked the knowledge and skill to pursue more active and age-appropriate activities. Bigge (1991) described numerous games, hobbies, and crafts that handicapped children and adults could pursue. In some cases, adaptations had to be made for handicapped persons to successfully engage in the activity. In other cases, however, no adaptations were required. It was simply a matter of teaching handicapped persons about a specific recreational pursuit and then providing minimal support as they began the activity. One form of recreational pursuit mentioned by Bigge was photography.

Cameras have become simpler over time and it is now possible for a very inexpensive camera to produce a very high quality photograph. Unlike other art forms, photography is one that allows the novice to produce interesting and satisfying images without hours and hours of formal instruction. Engaging in avocational photography may result in other benefits as well. Producing nice photographic images may improve one's self esteem and there may be other adjunctive benefits (Minner, 1978).

For these reasons, we planned and implemented a special project we called "Cross-Cultural Images". The goal of our project was to improve the quality of life for handicapped children by teaching them avocational photography skills. Our project involved handicapped children residing in three areas of the United States, special education teachers working in those three areas, and faculty members and preservice special educators working at two universities.

Support Of The Project

All of the project activities were supported by grants from the Foundation for Exceptional Children, the Southern Poverty Law Center, or internal resources. With these funds we purchased books, cameras, film developing, and a variety of frames, mats, and other materials to mount the photographic exhibitions.

Description Of Our Sites And The Children In Our Project

Our project included three distinctive sites---rural Appalachia, a small town on the Navajo Indian Reservation, and a town on the United States-Mexico border. Our Appalachian site was Johnson City, Tennessee. Johnson City is a medium sized city of about 50,000 in extreme East Tennessee. Though the city itself is home to a major regional university and the common amenities of urban life, it is located in a very rural area of the state and many of the children in Johnson City are from rural backgrounds and face many of the common challenges associated with rural life. The specific school site used in Johnson City was Mountain View Elementary School, a modern school serving the city's poorest families. The faculty at Mt. View places an emphasis on arts programming and the school supports several interesting initiatives including Suzuki string training, a piano lab, and a pottery workshop. The site on the Navajo Reservation was Pinon, Arizona. Pinon is a small and very remote community about seventy-five miles east of Flagstaff, Arizona. Though Pinon is on the Navajo reservation, it is quite close to the Hopi Reservation and consequently, some of the residents are Navajo, some are Hopi, and a few claim other tribal affiliations. There is a modern grocery store in Pinon, a Trading Post, and a few other local businesses. Pinon is a remote community. The road from Flagstaff to Pinon is often impassible during the winter months and many residents of the community live in traditional hogans or other homes far from paved roads. The third and final site in our project was located in Nogales, Arizona. Nogales is in Southern Arizona and is on the United States-Mexico border. Indeed, Nogales is a "twin city"---there is a Nogales, Arizona and a Nogales, Sonora. Nogales is a bustling trade center and has the ambience and character of many border communities.

In all cases, the children in our project were enrolled in special education programs. Students were mildly handicapped and ranged in ages from seven to eleven. Most of the children were from relatively poor families and many of them resided in rural, in some cases quite remote areas. The preservice special educators who worked in our project were enrolled in the Mt. View Partnership Program, the Pinon Partnership Program, or the La Frontera Program. All of these programs are school-based teacher preparation initiatives supported by East Tennessee State University and Northern Arizona University.

Components Of Our Program

Our project had four major components---teaching the children about photography, allowing them the opportunity to take photographs, mounting and displaying the exhibition, and sharing the exhibition with children at other sites.

To teach children about photography, we purchased some books of professional photography and asked them to look at the pictures. We selected books of professional photography, which represented the area each child was in. For example, we purchased books by Ansel Adams for the Navajo site and books by several Hispanic photographers for the Nogales site. After sharing these books for a time, we read the children a book titled "Click: A Book About Cameras and Taking Pictures" (Gibbons, 1997). This simply written book provides a colorful and informative instructional program in photography for young children. The components of a simple camera, tips for taking good indoor and outdoor pictures and camera care are all discussed. Afterward, we discussed three simple ideas---selecting an interesting subject, framing the shot, and use of light. To help our students remember and understand these concepts, we used the acronym "SFL". In terms of selecting interesting subjects for photographs (the "S" in our mnemonic), we emphasized the importance of taking pictures representative of children's unique geographical setting and cultural heritage. For students in Johnson City, we encouraged students to take pictures of the fall colors, the mountains and lakes in the region, and the animals on their farms. For the Navajo students, we encouraged them to take pictures of the mesas in the area, their homes, and the horses, cattle, and sheep their families kept. This component of our instructional program proved to be a bit difficult. Several children had difficulty understanding the kinds of images we ideally wanted them to capture on film. Through many examples and non-examples, many of our students seemed to acquire some understanding of what we were aiming for. However, most of the children also seemed very interested in taking some shots of their families and friends, their school, and of course, themselves. We attempted to balance our interest in capturing some images of each region with the children's' interest in using their own imaginations and making their own decisions.

We also worked with students in the area of framing (the "F" in our acronym). We talked about the importance of getting the main subject in the frame of the shot as well as the interesting effects when a photographer elects to not center the main subject in the frame, but rather place it off-center for dramatic effect. Finally, we talked about lighting (the "L" in the acronym). We discussed what happens when a picture is taken into the sun or another light source, the importance of adequate lighting, the use of the flash, etc.

Students seemed to both enjoy and understand these ideas and after the discussion, we allowed them to practice their skills with an instant image camera. In some cases, this was the first time children had been permitted to use or even handle a real camera. Finally, we gave simple one-time-use cameras to each child and told them to keep them for a period of two weeks and take some interesting shots. We referred to the children as photographers or artists and their careful handling of their cameras suggested that they also considered themselves to be quite special.

After a period of time, the students were given the developed pictures and asked to make their selections in order to devise their exhibitions. Students selected a variety of shots---some representing their unique physical locations and cultural backgrounds and some of their families, friends, and homes. We did not want to be overly prescriptive as the exhibitions were put together. Some pictures that meant a great deal to a given student were, in some cases, not the best pictures from our perspectives. Generally, we abided by the children's' wishes and supported their decisions. Pictures were framed and matted. Some were placed in albums. Then, the formal exhibitions were put together. We placed attractive tablecloths on several tables and arranged the pictures on the tables. The exhibitions were displayed in the local schools and in some cases, were also displayed in non-school locations (e.g., the exhibition from Johnson City was displayed in the school and in the foyer of the Education Building on the East Tennessee State University campus). At present, each exhibition is being sent to each site and eventually, each of our three sites will receive each of the exhibitions. Teachers and students are free to contact each other by regular or e-mail and in some cases, teachers have devised instructional units, which pertain to each of the three geographical areas in our project.

Results

Students in our program demonstrated very good ability to manipulate their cameras and ultimately produce images of high quality and interest. Several of the photographs taken by the children in this project were judged to be quite artistic and technically good by professional photographers who viewed the work. Students were very interested in doing more work in photography. One student expressed interest in taking some photography classes when he went to the local high school. Another mentioned that he would be enrolling in a summer photography workshop held at a community art center. Though the students in our project clearly acquired the knowledge and skill to do good work in photography, the most powerful results of our project were related to the pride evidenced by so many of our students. At one of our sites, the exhibition was displayed during a school open house and many children and many parents attended the event. Both students and adults made many positive comments about the exhibition and the smiling faces of our photographers were a testament to the power of our work. Our budding artists were literally beaming. The spotlight was on them and in this case, the spotlight was one that put them in a most favorable light.

Conclusions

Our project was relatively low cost and required a minimum of human resources to complete. The book we used as our principle instructional tool was about $6.00 and each one-time-use camera cost about $5.00. Film development was about $4.00 and frames and mats were also inexpensive. For those interested in doing a similar project. we would recommend that local businesses be approached for possible donations. Also, it is possible that high school students in districts having a photography program in their curriculum do the film development. In terms of instructional suggestions, we found that our students learned the new concepts and skills quite readily. It was somewhat difficult to teach some students the notion of "a picture representing your cultural heritage", but rather surprisingly, most of our students came to understand even this idea. Clearly, the highlight of our work was the exhibitions held at each site. We would recommend that teachers build this event up as much as possible. Perhaps special invitations could be sent to the children's parents. Perhaps the local newspaper could be contacted and do a story on the event.

The most significant issue we experienced in our project pertained to its continuation. Many of our students wanted to do more. Much more. Though we took their interest as a very positive sign, we were hard pressed to think of creative ways to sustain their work. One site attempted to do this by training the students in the use of the school's digital camera. These cameras are simple to use, but rather expensive to purchase. However, students trained to use them may take pictures and print them on the school's equipment, thus saving the expenses associated with film development. Several of the students at this site learned to use the digital camera and became quite proficient at printing the images on the school's laser printer. Two of the students even learned to crop pictures and place decorative borders on them using simple photography programs owned by the school. For schools possessing such equipment, this is a good approach to use so students may continue to work in photography and continue to gain more skill and greater confidence.

In summary, all human beings need to acquire the knowledge, skill, and dispositions to engage in meaningful recreational activities. This is no less true for handicapped than for nonhandicpaped persons. Recreational activities enrich our lives. They make life interesting and fun. They are important for everyone. Many recreational activities may be pursed by disabled persons and we believe that photography is an excellent choice. It is relatively low cost and relatively easy for novices to rapidly acquire the skill necessary to produce nice work. We strongly encourage teachers to consider adding photography to their curricula.

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EVALUATION MODEL FOR MULTICULTURAL EDUCATION TRAINING PROGRAMS

Introduction:

In 1996, Dr. Richard F. Rodriguez, Professor of Education, and Laurence A. French, Professor of Psychology at Western New Mexico University were awarded a training grant from the Department of Personnel Preparation in Washington, D.C. the project was designed to prepare Special Education teachers from Cobre, Deming, Lordsburg, and Silver City, all border school districts with Mexico, to effectively work with special needs children from culturally and linguistically different home environments. Thirty students from the above listed school districts were selected to participate in the training. The selection of teachers was the exclusive responsibility of the school districts involved, following specific criteria outlined by Project BESTT in conjunction with Graduate School requirements. The specially designed training curriculum leading to an Interdiscipline Masters of Arts degree in Bilingual Special Education, included course work in the disciplines of Bilingual Education and Special Education as well as Multicultural Education and Cultural Psychology. Dr. Rodriguez, Project Director, and Dr. Laurence French, Principal Investigator, worked closely and collaboratively with the school districts involved, the Mexican schools in Palomas, Mexico, the Professional Standards Commission and the New Mexico States Department of Education in this endeavor.

Rodriguez and French noted that New Mexico is an ideal classroom for rural, multicultural studies. The state has the highest proportion of Hispanics (Mexican-Americans) in the U.S. (39%) and a rich and extensive history. New Mexico also has a substantial American Indian population with 19 Pueblos, 2 Apache Reservations and three components of the Navajo Nation -- the largest American Indian group residing on the biggest reservation in the United States. American Indians comprise 9 percent of the state's population. This does not include the Mestizo, or Mexican/Indian mix which accounts for a large proportion of Mexican-Americans, especially those residing in the southwestern portion of the state where Project BESTT is administered. A high proportion of the Mexicans residing along the U.S. border, in what is termed, the frontier, are also Mesitzos. This proportion of American Indians in New Mexico also does not account for the thousands of Arizona Navajo who frequent the border town of Gallup and Farmington as well as the schools in the northwestern portion of New Mexico. Another unique characteristic of New Mexico's minority cultural groups is their stability. Both the Hispanics (Mexican-Americans) and American Indian groups had a long history predating U.S. Anglo-American and African-American involvement in this region. This stability has contributed to the maintenance of cultural traditions (Bailey & Bailey, 1986; Bantam & Higbee, 1995; Belitz & Valdez, 1994; Bermudez, 1994; Boles, et al, 1994; Boyd, 1990; Castaneda, 1994; Chavez, 1993; Chavez, et al, 1994; Chavez, et al, 1996; Donato, 1997; French, 1994; 1997; French et al, 1995; French & Picthall-French, 1998; Gertz, et al, 1995; Gibbs, et al, 1998; Hileman, 1997; Howley & Eckman, 1997; Human & Wassem, 1991; Hunter & Windle, 1991; Moses & Wilson, 1993; Ng, 1996; Sosa, 1993 Sotomayor, 1991; Webb, et al, 1996).

The training curriculum of Project BESTT has been used as a model for other similar training programs at the national level that are not funded but are interested in similar training. Given that minority group children continue to encompass a large portion of enrollment in Special Education classes, this model presents a viable training alternative, especially in rural schools. The particulars of the training model was presented at the 1998 ACRES Conference held in Charleston, South Carolina: PROJECT BESTT: A TRAINING MODEL FOR RURAL MULTICULTURAL, BILINGUAL SPECIAL EDUCATION. Twenty-five of the original thirty student cohort graduated with their Masters of Arts degree at the December commencement at Western New Mexico University in 1998. Moreover, Project BESTT was the vehicle for establishing a special collection on bilingual, multicultural special education at Western New Mexico University's Miller Library -- a facility that also serves the local school districts and public. Professors Rodriguez and French donated 60 books obtained from the grant to the library for this special collection. This paper presents the evaluation model and data which was designed to measure the effectiveness of Project BESTT in disseminating the information to the general school faculty from the participating school districts.

Research Design and Findings:

The Principal Investigator devised a student evaluation with: (1) a pre-post assessment of the program participants' attitudes toward the education of minority students with handicapping conditions including curricular adaptations, role in the referral, assessment, the IEP planning process, and confidence in their ability to work with the minority learner; (2) pre-post assessment of knowledge pertaining to topics included in the training sessions (i.e., exceptionality concerns of CLDE students, cross-cultural methods for exceptional learners, convergence issues, curriculum development and adaptation procedures); and (3) on-going assessment of program integration effectiveness. Program participants were also interviewed and developed special topic methods papers for use in the training of their peers, administrators, and parents within their school district and the communities served by the school district.

The assessment tool consists of twelve (12) attitudinal questions followed by another twelve (12) knowledge-based questions. The first twenty-four questions use a Likert-type scale. Four additional open-ended questions complete the PROJECT BESTT PRE/POST ASSESSMENT questionnaire. This tool was adapted from the Howard University RESEARCH AND TRAINING CENTER (Walker, et al, 1996) manual. The research design involved a quasi-experimental design whereby the Project BESTT cohort constitutes the "Experimental" sample - that group exposed to the training - while a randomly selected groups of teacher from the participating school districts comprised the " Control" sample. Hence, the experimental sample would remain relatively stable across time (with attrition being the only intervening variable) while the control samples would differ due to the chance of being randomly selected either in the pre or post samples, or both. The pre-assessment was administered prior to the start of Project BESTT while the post-assessment was administered following the completion of the last course requirement the practicum. The sample size for the experimental group was: pre-test = 30/post-test = 25. Accordingly, the sample size for the control groups was: pre-test = 67/post-test = 96. (Actual data analysis will be presented at the ACRES 99 Conference in Albuquerque.) The assessment tool is as follows (only tense was changed between the two administrations):

PROJECT BESTT PRE/POST ASSESSMENT TOOL

Name________________________________ Date____________________

Use the following Likert-type scale when responding to questions 1 - 12.
(Circle your response)
1 = Strongly Agree
2 = Moderately Agree
3 = Slightly Agree
4 = Slightly Disagree
5 = Moderately Disagree
6 = Strongly Disagree

1. Mexican American students are slower learners than other students.
1 2 3 4 5 6

2. American Indian students are slower learners than other students.
1 2 3 4 5 6

3. I get frustrated working with students who do not speak English well.
1 2 3 4 5 6

4. Students with physical or learning disabilities impede the motivation and achievement of other students without these "handicapping" conditions.
1 2 3 4 5 6

5. Students with physical or learning disabilities who are from minority backgrounds, especially those where a language other than English is spoken, are more prone toward failure than students who do not share these characteristics.
1 2 3 4 5 6

6. I often feel that I am doing bilingual, special education students a disservice due to my lack of training in this field.
1 2 3 4 5 6

7. My school district has a viable plan of action for serving handicapped students.
1 2 3 4 5 6

PROJECT BESTT PRE ASSESSMENT Page 2

8. My school district has a viable plan of action for serving handicapped students who come from families where a language other than, or in addition to, English is spoken.
1 2 3 4 5 6

9. My community is knowledgeable of and responsive to the needs of handicapped individuals.
1 2 3 4 5 6

10. My community is knowledgeable of and responsive to the needs of handicapped minority individuals who speak a language other than, or in addition to, English.
1 2 3 4 5 6

11. Our school's IEP process takes into account the special needs of bilingual, special educational students.
1 2 3 4 5 6

12. In our school, the curricular is sufficiently modified to accommodate the special needs of bilingual, special educational students.
1 2 3 4 5 6

For questions 13 through 24 use the following scoring format:

1 = excellent, 2 = good, 3 = fair, 4 = poor

My knowledge of ____________ is:

13. Research Methods
1 2 3 4

14. History & Philosophy of Education
1 2 3 4

PROJECT BESTT PRE ASSESSMENT page 3

15. Psychology of Multicultural learning
1 2 3 4

16. Culturally & Linguistically Different Exceptional Children
1 2 3 4

17. Methods in Language Instruction
1 2 3 4

18. Culturally Different Emotionally Disabled
1 2 3 4

19. Culturally Different Learning Disabled
1 2 3 4

20. Introduction to ESL
1 2 3 4

21. Second Language Theory Methods & Materials
1 2 3 4

22. Multicultural Assessment Techniques
1 2 3 4

23. Methods in Teaching Culturally & Linguistically Different Exceptional Children.
1 2 3 4

24. Issues in Bilingual/Multicultural Education
1 2 3 4

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25. Do you have specific outreach methods to identify and serve persons with disabilities from culturally diverse backgrounds? Please describe.

26. What strategies does your organization use to tailor services support to different cultural/ethnic populations?

27. Have you participated in any program or project related to disabilities and cultural diversity? YES NO
If Yes, please describe your involvement in these programs/projects.

28. What suggestions would you make for future participants in a federally supported project/program relative to needs of person with disabilities from culturally diverse backgrounds? (Respond on separate sheet.)

*Questions 25 - 28 are adapted from the HOWARD UNIVERSITY RESEARCH AND TRAINING CENTER published in 1996.

The Practicum topics addressed four method areas: " Theories and Methods in Language Instruction", "Multicultural Assessment Techniques", " Methods in Teaching Culturally/Linguistic Different Exceptional Children", and "Multicultural Issues". These questions and methods curriculum development projects were used to measure Project BESTT's goals and objectives.

GOAL A To expand and enhance a pre-service teacher training program for Bilingual/ESL moderate needs Special Education Teachers:

Objective 1. To establish an advisory committee to give direction, advice, and guidance to the project.

Objective 2. To recruit 30 students for the program primarily from the Hispanic school community. Native American and Anglo teachers will also be considered. Target schools used in the project are Silver City (10), Deming (10), and Cobre (10).

Objective 3. To conduct graduate level course work on campus leading to a Master's Degree in Bilingual Special Education.

Objective 4. To conduct on-site teacher training practicums in the target schools with teachers that are working with CLDE children.

GOAL B To provide target school districts with trained teachers for CLDE children.

Objective 1. To assist trainees in developing the project competencies via course work for teaching CLDE children in the target schools.

Objective 2. To implement a practicum field experience in the host school district.

GOAL C. To develop dissemination activities of project model (local, state, national):

Objective 1. To present at conferences - CEC, NABE, OBELMA, etc.

Objective 2. To provide inservice workshops in schools and/or offer technical assistance to universities upon request.

Objective 3. To publish in professional journals, the activities of the project.

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THE ALLIANCE PROJECT: IT'S IMPACT ON SPECIAL EDUCATION TEACHER PREPARATION EFFORTS IN RURAL AREAS

The *New* Alliance Project, funded by the U.S. Department of Education's Office of Special Education Program's (OSEP) Research to Practice Division, was developed in response to a federal mandate for the provision of technical assistance and information to Minority Colleges and Universities of Higher Education (P.L. 105-17). In order to be eligible under the Minority Institution of Higher Education (MIHE) umbrella, a college or university must be an Historically Black College or University (HBCU) or have 25% or more student enrollment from underrepresented ethnic groups (excluding foreign students). The Project strives to increase MIHEs' participation in personnel preparation grants, contracts, and cooperative agreements in discretionary programs supported by the Individuals with Disabilities Education Act (IDEA). The primary goal of the Project is to increase the number of well-prepared teachers to serve children with disabilities, and who reflect the cultural and linguistic diversity of that population. Alliance also supports capacity-building and infrastructure reform within the MIHE personnel preparation programs in special education and related services to secure a systematic, ongoing program reflecting the transfer of relevant research to best practices in teacher preparation.

The Alliance Project: A Brief Overview

The Alliance Project, a continuation of a previous 6-year grant (formally The Alliance **2000** Project, housed at The University of New Mexico), provides opportunities for MIHE faculty to participate in awards for grants and contracts, boards of organizations, peer review panels, and professional development. The primary purpose of these activities is, again, to create a more diverse pool of special educators and related service providers who contribute high quality education to students with disabilities and their families. In November of 1997, after six successful years at the University of New Mexico, The *New* Alliance Project (referred to hereafter as The Alliance Project) Headquarters were moved to Peabody College at Vanderbilt University. All technical assistance and dissemination efforts for the project are coordinated at Vanderbilt.

The goals of The Alliance Project are to:

- Maintain a satisfactory level of submissions and funded proposals supporting special education and related service personnel preparation efforts at MIHE's, particularly for funds available through OSEP and state programs supported by IDEA.
- Support new Project Directors from MIHE's in the implementation of new funded projects.
- Implement effective practices and develop new models for recruiting and retaining diverse personnel for training and careers in special education and related services.
- Work with different constituent groups to assist in the development of partnerships with an array of agencies, organizations, and other funded projects.
- Establish a review panel and process to evaluate successful strategies for program development and enhancement.
- Facilitate MIHE faculty in developing conference presentations and journal publications to highlight their successful practices.
- Create and implement activities to support the goals developed in a collaborative effort between Alliance Headquarters and the Alliance Centers.

Alliance Centers

The Alliance Project is composed of a national consortium including the Alliance Headquarters, a Washington DC Metropolitan Area Office, and four Alliance Centers. Each Center represents a principle constituent group, thus providing equitable access to information and activities as well as a forum for discussion and implementation of ideas. This national consortium includes:

- The Alliance Washington DC Metropolitan Office
- The Alliance Center for Tribal Colleges & Communities, located in Wilmot, SD.
- The Alliance Center for HBCU's & Predominately Black Colleges and Universities, located at Fayetteville State University in North Carolina.
- The Alliance Center for Hispanic Colleges and Universities, located at the BUENO Center at UC-Boulder in Colorado.
- The Alliance Center for Asian/Pacific Rim Colleges and Universities, located at California State University - Los Angeles.

This manuscript is a compilation of The Alliance Projects' technical assistance efforts with HBCUs and other MIHEs in preparing professionals to serve special populations in rural settings. **Rural**, in this instance, has been defined using the National Association of State Directors of Special Education (NASDSE) definition as a population of 25,000 or fewer.

The Alliance Impact: Nationwide

Data have been collected since the inception of the original Alliance 2000 Project. These data suggest a successful trend at MIHEs, showing significant gains in acquiring federal funding in order to recruit, retain, and better prepare personnel from culturally and linguistically diverse backgrounds to meet the needs of special populations. Table 1 illustrates the impact of Alliance's work with MIHEs.

Table 1
Highlights of Alliance Proposal Outcomes

HBCUS (approximately 44 have special education and/or related services programs)	196 proposals submitted to OSEP, 37 funded 19% success rate (equal to majority colleges and universities) 30% success rate in FY97 36% success rate in FY 98 at least 12 additional grants funded through other agencies (e.g., Office of Rehabilitation Services)
TRIBAL COLLEGES (12 have special education programs)	35 proposals submitted to OSEP, 9 funded 26% success rate overall 40% success rate in FY97 33% success rate in FY 98
Minority IHEs Overall (227 minority IHEs have special education and/or related service programs)	862 proposals submitted to OSEP with Alliance assistance 226 projects funded at 72 schools 308 colleges and universities served by Alliance 845 individual faculty have participated in Alliance activities
New Proposal Writers	132 proposals submitted to OSEP by new grant writers 76 received funding and are now OSEP Project Directors

Alliance Project Impact on Rural Schools

The focus on training special education personnel from diverse backgrounds for careers in rural areas is an important one. For example, 94% of public schools with high American Indian enrollments are in rural areas and small towns (Pavel, Curtin, & Whitener, 1997). Yet, OSEP (1996) reported that 35% of rural schools had special education teaching vacancies in 1990-91, increasing the demand for well-prepared teachers. Over its eight-year existence, the Alliance Project has served faculty from 46 different rural colleges and universities. This number seems quite small, particularly when the Project has served 308 schools in all, but take a moment to think of some settings that you would consider to be rural. For example, the University of Texas at Brownsville is considered to be rural by other definitions, yet the population of Brownsville is 132,000 (which is over 25,000 and thus disqualifies if from the NASDSE definition of rural). In fact, over half of the Alliance-served schools are in communities of 5,000 people or less. Table 2 provides a breakdown of Alliance-served schools by their community population.

The majority of the rural schools served by Alliance are Native American/American Indian Tribal Colleges or Universities and Historically Black Colleges and Universities. The Alliance Project has served or is currently serving 19 Native American schools, 18 HBCUs, 5 multi-ethnic schools, and 4 Hispanic schools in rural areas.

Table 2
Population of Communities of Schools Served by Alliance

Community Population	# of Rural Schools
20,000 – 25,000	3
15,000 – 20,000	5
10,000 – 15,000	7
5,000 – 10,000	6
1,000 – 5,000	18
< 1,000	7

Alliance participants are not restricted to the amount of assistance they can receive. Roughly one half (56%) of the participants from rural schools have sought assistance on just one occasion. Many others have been served twice, three times, and as many as eight times by the Alliance Project. Participants have, on average, been served twice. A typical relationship between Alliance and a participant may consist of attending a grant writing workshop to learn the basics of proposal writing, followed by one-on-one mentoring to refine a nearly completed grant application. Many of Alliance's activities are regionally located in major metropolitan areas where Alliance brings participants from rural schools for the activities. However, Alliance has also facilitated the attendance of people from rural schools by holding meetings in places such as Billings, Fond-du-Lac, Great Falls, and Bismarck. Meetings have been held in cities like Charlotte, NC for faculty from rural HBCUs . It should be noted that in addition to direct assistance through the activities listed above, Alliance has also served many faculty from rural schools through items and information available on its Product List. Alliance has assisted 130 faculty members at 46 rural MIHEs through a variety of activities. Table 3 summarizes the types of technical assistance provided.

Table 3
Alliance Activities

Activity Provided by Alliance	# of Participants
Grant Writing Workshop	83
Grant Writing Work Session	18
Washington DC Conference	39
Focus Seminars	24
Other Meetings	18
One-on-One Mentoring	68

As mentioned earlier, the purpose of the Alliance assistance is to enhance chances of securing grant funding in OSEP's personnel preparation competitions. This, in turn, will improve the MIHE special education programs and produce special education graduates with strong qualifications. Through Alliance assistance, 63 grant applications have been submitted. Most of these have been submitted to OSEP's Minority Institutions competition but there have also been some submitted to OSEP's other competitions. Thirteen grants have received funding at a total of 11 different schools. Prior to the work of the Alliance Project, only 4 rural MIHEs submitted proposals and only one was funded. It should be noted that the success rate of Alliance-served rural schools (13 out of 63, 21%) is just slightly less than the national success rate in OSEP competitions (24%).

Impact of Federal Funding in Rural Communities

Seven current and recently funded project directors provided information on the impact of the federal funding on their programs. These faculty come from schools ranging in size from 256 to 2600, with an average enrollment of 955. The average number of full-time faculty in the special education programs is 1.9, with a range of zero to 6. In addition, these departments rely on part-time (average of 1.3) and adjunct (average of 1.9) faculty. The number of students enrolled in the special education programs ranged from 25 to 275, with an average program size of 114.

Impact on MIHEs

Five of the schools surveyed were tribal colleges, one was an HBCU, and one was a predominately Hispanic school. As a result, the students recruited through these grants were Native American, African American, and Hispanic. The students tended to be older and female.

Two of the grants supported associate degrees for paraprofessionals in special education; two supported individuals in undergraduate programs; and, three supported students in graduate programs. At least 116 students have currently completed their programs, graduated, or received certification to date; many more are still in the pipeline. All project directors actively recruited - and retained - persons from diverse backgrounds

For five of the schools surveyed, the impact of the federal funding on their programs was crucial to the development of the program. With the "seed money" provided by the government, several schools were able to develop special education programs, or concentrations such as bilingual special education, where none had existed in the past, hire faculty and recruit students. For three of the four schools whose funding has ended, the number of students in the program has been maintained. In addition, the program has become institutionalized by the college. Because of the students in the grant, classes that would otherwise have been cancelled due to low enrollment were retained. In addition, two schools indicated that the overall enrollment in their special education program had increased due to the increased visibility of the project.

Impact on Local School Districts

The outlying school districts surrounding these schools often look to the graduates of the teacher preparation programs to meet their demand for qualified professionals – a demand which is often difficult to meet due to the unique challenges posed by living in remote areas. Because the majority of the students in the grant-supported programs were recruited from the local communities, and these students stayed in the communities after graduation, the impact on the local schools was significant. The number of school districts served by each rural MIHE ranged from two local districts to approximately 100 (the school served a large tri-state area). With the exception of the MIHE that served the 100 district area, the average number of local school districts served by the rural MIHEs was 6.3.

To date, the schools surveyed here have provided over 100 professionals to 42 local school districts. Many of these graduates are in high demand; graduates from one program have all received a minimum of three job offers. All but three of the graduates to date have returned to local districts after completion of their program. Of those three, one continued on in school for an additional degree, one became the special education coordinator for a Headstart program, and one became the college's registrar. As a result of these successful training grants, rural - and often remote - districts that typically have great difficulty recruiting special education teachers acquired quality professionals to work with students with disabilities with little recruitment effort.

Recruitment and Retention Tips From Those Who Know

In contrast to colleges and universities in urban and suburban areas, institutions of higher education in rural areas often face unique challenges when recruiting students into their special education teacher preparation programs. Unlike the urban schools, students may travel greater distances to attend these schools and require increased financial support if they must live away from home in dorms, in off-campus housing, etc. As a result, the faculty in these programs must devise innovative means of recruiting potential special educators into their programs. Funds from federal grant competitions afford much needed financial assistance to special education teacher training programs in order to initiate new programs, enhance existing programs, and – most importantly - provide student support. However, funding alone is not enough to ensure high numbers of quality recruits.

Recruitment

Here are some tips from the experts (those who have successfully recruited and trained in rural areas).

Tip #1: *Getting by with a little help from your friends.* School district personnel can provide names and contacts of individuals who would be prime candidates for special education personnel preparation training. Paraprofessionals who are residents of the local communities, general education teachers interested in changing teaching areas, and parents are all excellent recruits referred by local districts.

Tip#2: *Beat the bushes*! Flyers and brochures alone just don't do the job. Recruitment is hard work and requires an intensive initial investment. These project directors were present in local community organization meetings, church services, local high schools, and a variety of other places where potential recruits can be found.

Tip #3: *Word of mouth.* The old adage is not true: Good news does travel fast. Once the information is out in the community, particularly when a cohort of students is progressing through or has completed the program, the recruitment efforts of the project directors decreased as interested students contacted them. One project director had more applicants than the program could accommodate! Another said, "My best recruiters are my students from earlier cohorts. They do a fantastic job." The importance of recruiting within the communities, which then relieves the pressures for those who would otherwise have to travel across- or out-of-state to attend college was noted. One faculty member wrote, "Venturing off to get the degree wasn't even a reality. Our program allows students to complete a four-year degree and never leave home."

Retention in Training Programs

Yet, recruitment alone is not enough. Students from nontraditional backgrounds face barriers and hurdles to academic achievement that must be considered carefully and addressed in a proactive manner. Again, tips from the experts provide a myriad of ideas for those looking to improve their current retention rates.

Tip #1: *Create a safety net.* The faculty members we interviewed served as the advisors for the grant-supported students. They maintained close and constant communication with the students on their grant, and followed up if a student missed classes. One school even had a retention officer (yes, that is the official position title!) whose sole responsibility was to follow up on students and help them address whatever barrier had kept them out of class. Faculty assisted the students as they negotiated the college or university system, helped them develop their program of studies and helped make decisions about coursework. As one faculty member said, "I ran interference on campus with all the administrivia (that could be quite frustrating for the students)". For students who were having academic difficulties, faculty members found academic support for them (many times providing intense individual tutoring). Peer mentoring, along with faculty and staff mentoring, was an important component as well.

Tip #2: *Beyond the norm.* The grant funding can be used to provide additional support beyond the typical tuition, books, and stipends. Older students may need childcare costs reimbursed. Students who travel long distances to class are especially appreciative of mileage reimbursements.

Tip #3: *Professional gold stars.* Local school district administrators, particularly those experiencing shortages of qualified special educators, were particularly helpful in certain areas. For example, some school districts allowed currently employed paraprofessionals to leave school to attend classes that eventually led to an undergraduate degree. The students earned a degree without the hassles of evening courses; the school district got newly certified teachers. Other teachers who received an additional certification, such as in bilingual special education, became master teachers in their districts upon completion of the program. One project director wrote, "Many of the schools have had our students do training for teachers and aids on the new things they've learned in our ed program."

Tip #4: *Students first.* Because traditional and even some evening classes were difficult for the students to attend, many of the faculty we interviewed held their courses on weekends. Although teaching weekend courses was not the first choice of these faculty, they realized that in order for the program to be effective, it needed to be accessible to students. Classes held in desirable time slots for faculty but have no students do neither the program, the college, (and eventually the faculty member if her classes are cancelled) any good. Course content was also designed in consideration of the cultural background of the students. Culturally sensitive instructional methods, strategies, and content were infused into the curriculum.

Current Services Available to Rural MIHEs through the Alliance Project

For faculty members at MIHEs who are interested in enhancing their programs by obtaining special education personnel training funds, The Alliance Project is available to provide technical assistance in accessing OSEP funding. Support is provided through the following activities:

Regional Grant Writing Workshops provide technical training on the specific outline, format and content for grant submission to OSEP's Research to Practice Division's competitions.

Regional Briefing Sessions are short sessions that provide updates on the latest changes in OSEP competition information and evaluation criteria for experienced grant writers.

Regional Work Sessions provide an opportunity for participants to collaborate side-by-side with mentors and content experts in a concerted effort to revise a previously unsuccessful application for submission to an upcoming competition.

Mentorships provide a one-on-one relationship as a support system while the participant is engaged in writing an application for submission.

Pre-Review Consultations review and critique and application prior to actual submission.

Information Resources provided by items from the Alliance Product List offer the participant cutting-edge information, examples of exemplary abstracts and funded proposals, as well as a vast variety of support data for use when preparing an application for submission.

In conjunction with the technical support component of the Project, individual professional development activities are also available. Included in these activities are topical seminars and national and regional conferences. Dissemination of information and funding support for all activities are channeled through the Alliance Centers, *Alliance Alerts* via email (and occasionally slow mail) from Headquarters and through the quarterly *Alliance Newsletter*.

If you are a faculty member at an MIHE interested in receiving technical assistance in proposal preparation, contact the Alliance Headquarters at (800) 831-6134, or at alliance@vanderbilt.edu. Additional information is available through our Web page: www.alliance2k.org.

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DISABILITY RESEARCH ENCOMPASSING NATIVE AMERICANS IN MATH AND SCIENCE: A DEMONSTRATION INCLUSION PROJECT

In 1993 the National Science Foundation funded a project at the University of North Dakota entitled, "Disability Research Encompassing Native Americans in Math and Science" (DREAMS). The project is a comprehensive program designed to (1) offer experiences to Native American students with disabilities in the areas of mathematics and science, and (2) encourage systems change in schools on or near Indian reservations in the following four domains:

1. Encouraging development of science instructional models based on hands-on learning and conceptual development.
2. Facilitating approaches to mathematics curriculum aligned with standards set by the National Council of Teachers of Mathematics (NCTM, 1989). These standards also feature an emphasis on conceptual development via the use of models and manipulative aids, and stress child- and developmental-centered learning.
3. Facilitating approaches to national science standards set by the National Academy of Sciences (1996).
4. Engendering sensitivity to Native American cultural sensibilities in the teaching of mathematics and science. This entails the infusion of Native American cultural images into instruction and methods.
5. Creating accommodations for students with physical, sensory, perceptual, cognitive, and behavioral differences in mathematics and science instruction.
6. Career exploration in technical fields is undertaken with students, teachers, and parents.

In the remainder of this paper, DREAMS activities and outcomes are described. A section each is devoted to the organization of DREAMS, programmatic activities, evaluation procedures, and outcomes.

DREAMS Organization

Project DREAMS is constituted as a partnership between the University of North Dakota and 10 - 12 public and tribal schools in North Dakota (the number depends on where DREAMS students are enrolled). As might be expected given a program embracing such diverse administrative units and covering essentially the entire area of North Dakota, coordination is central to the program's success. A project director, housed at the University of North Dakota, oversees the many aspects of the program. The project director reports to two principal investigators.

University personnel from many technical areas are recruited by the DREAMS coordinator to serve as faculty for summer institutes, to mentor children, and to advise core team members in curriculum development. Faculty members from the physical and biological sciences, aviation and space studies, as well as the College of Engineering and Mines have been involved in DREAMS. Faculty in the College of Education and Human Development lend their knowledge of curriculum and instructional development to the project. In addition, the College of Education and Human Development's research wing is responsible for project evaluation.

Members of a core team recruited by the Project Director organize summer institutes and assist with curriculum development. One of the principal investigators is a professor in the field of rehabilitation and advises program faculty about accommodations for students with disabilities. Site coordinators, typically employed by schools where DREAMS students are enrolled, are paid a stipend by DREAMS to coordinate the efforts of project staff, teachers, students, and parents.

An advisory group is impaneled to provide technical assistance to the grant. Members of the advisory board include Native American persons, experts on science and mathematics curriculum, technology experts, disability specialists, and representatives of the public schools.

Program Activities

The five goal areas, improvement of (i) mathematics and (ii) science instruction, (iii) Native American cultural infusion, (iv) disability accommodation, and (v) career exploration are accomplished via a variety of activities. The DREAMS project consists of several aspects including curriculum development, summer institutes, pedagogical training for teachers, systems change, and liaison activities. These program activities are briefly outlined below.

Curriculum Development

When the DREAMS project was initially gearing up, faculty members from UND and program staff met to plan institutes and to develop curriculum materials. The primary emphasis of these sessions was writing curriculum for math and science instruction as currently advocated by professional organizations, developing disability accommodation, and incorporating cultural awareness into science and mathematics materials and methods. In their planning efforts, staffers emphasized conceptual and hands-on aspects of mathematics and science, as opposed to reading, memorizing, and reciting facts (e.g., Weiss, 1994).

A curriculum guide centered around the biological sciences was produced as a model by project staffers (The Circle of Life, Greenwood, 1996). The guide contains readings regarding cultural infusion and disability accommodations. In addition, activities are included illustrating hands-on science and mathematics approaches. Circle of Life materials include a video depicting infusion and accommodation activities in action. Since the initial start-up period, curriculum planning sessions have continued as project personnel develop materials for each summer institute.

Summer Institutes

A central feature of DREAMS is a twice yearly summer institute, one held in June, the other in August. The week-long summer institutes provide opportunities for students, parents, and teachers to get together and explore mathematics, science, and Native American culture. Teachers likely to work with DREAMS students during the upcoming school year are recruited to attend the August institute. Summer institutes are held in a variety of settings around the state of North Dakota. The August 1998 institute held at UND was built around the theme of flight-and-space.

Students are exposed to many science, math, and cultural activities during the summer institutes. The camp-like atmosphere of sessions is enhanced by frequent fellowship and recreational activities. All the fun, however, is underpinned by serious intent: To expose students, parents, and teachers to the possibilities of learning science and mathematics, to the enchantment of exploring the physical universe with these tools, and to the possibilities of attending college and pursuing careers in technical fields. A sampler of activities from the August 1998 institute is provided below:

- Space Activities Exploration
- Comparing the Geology of Earth and Mars
- Planet Facts
- Construction of a Planetarium
- Internet Searches and Use of Presentation Software
- Culture Star (Ojibway and Mitchif Cultural Activity)
- Flight Simulators
- Airport Tour
- Egg Landing Activity
- Designing and Launching Bottle Rockets

Culture teachers, representing the indigenous peoples of North Dakota, play an important role in summer institutes. The culture teachers design opening and closing sessions which infuse the institutes with an air of respect for people of the prairies and northern forests. In addition, lessons and activities centered around Native American culture are included in institute programming for both children and adults.

Pedagogical Training in Science and Mathematics

Stipends and travel awards for teachers who work with DREAMS students during the school year are included in DREAMS funding. Teachers' summer institute schedules are arranged such that about half of their time is spent with students--observing and assisting project faculty--and about half in instructional sessions dedicated to exploring current thinking in mathematics and science curricular domains, as well as cultural infusion and adaptive methods.

Participating teachers also receive 3 mid-year "booster sessions" and earn credits at the University of North Dakota by completing projects related to (1) curriculum change, (2) accommodations and cultural considerations, and (3) mathematics and science assessment practices.

Systems Change and Liaison

Site coordinators are funded by DREAMS to ensure that teachers are supported in their efforts to implement change in science and mathematics along the lines described above. Site coordinators monitor progress of DREAMS students at participating schools and keep lines of communication open between teachers, parents, and university personnel. For example, curriculum and disabilities-accommodation materials needs of teachers are communicated back to the university (and hopefully met) in this way.

Project Evaluation and Student Assessment

Evaluation of DREAMS is conducted by staff members of a semi-independent agency, the Bureau of Educational Services and Applied Research (BESAR). The Bureau is the technical assistance and research arm of the College of Education and Human Development at UND. An evaluation study was proposed by the director of the bureau in light of the goals and practices set out in the original grant proposal.

Evaluation is based on collection of opinion and assessment data from students enrolled in the project. In addition, feedback is sought from parents, core team members, culture teachers, and teachers regarding (1) effectiveness of the summer institutes, and (2) systems change.

Student Data

Three subtests from the Woodcock-Johnson Psycho-Educational Battery-Tests of Achievement (1989, 1990) are employed to track students' progress in mathematics and science achievement. The science subtest was individually administered, as were both mathematics subtests from the WJ-R tests of achievement. One of the mathematics subtests assesses use of basic arithmetical and mathematical algorithms at a basic level of mathematics performance; the other is designed to tap problem solving skills.

The Attitude Toward Mathematics subtest (ATM) of the Tests of Mathematical Abilities (TOMA-2, Brown, Cronin, & McEntire, 1994), formerly the Estes Attitude Toward Mathematics Scale, was also administered to students. The ATM was designed to tap affective responses to the discipline in order to track the degree to which DREAMS programming was impacting students in this regard. Attitude toward science were measured via a 12-item questionnaire. Student perceptions of technical careers was assessed via a structured interview. All student data will be gathered at least twice, with most students being assessed three times.

In addition to the formal methods mentioned above, students are being assessed via observation and interviews. Following each lesson and activity, students attend "talking stations" where staff members interview them regarding perceptions of the activity, their conceptual development and understanding regarding the nature of the just-completed activity, and its relationship to past learning. Highlights of these interviews are to be recorded and used in program evaluation efforts. A survey form was developed which each student fills out upon completion of summer institutes. The survey form is used to assess students' perceptions of the quality of institute activities and presentations, and to ask once more about learning. Comprehensive Test of Basic Skills scores are collected yearly from participating districts for each student.

Adult Evaluation

As is true of students, adult participants are asked to provide qualitative and quantitative impressions of all summer institute activities. This is accomplished via a survey document developed especially for DREAMS and which is revised each summer in light of the specific activities planned during the institute. To a great extent, feedback from adults and students is employed to redesign and redirect summer institute procedures and activities.

Adult participants complete an instrument about North Dakota Tribal cultures (Tribal Cultures Survey; TCS). As no effective instrument was available, the TCS was adapted from an instrument which referred to the role of tribal cultures in the overall education picture in North Dakota. Items were changed to reflect middle school and secondary education issues. Because the instrument was not directly employed prior to its use in DREAMS evaluation, part of the assessment process has been to establish the psychometric properties of the tool. It has, to this point, yielded a single factor which appears to tap the level of sophistication regarding Native American cultural issues. Higher scores on the 13 items identified via principal components analysis seem to measure positive attitudes toward Native American cultural resilience and recognition of the struggles of Native American individuals in Euro-American society. The scale is internally consistent; a Cronbach's (1951) alpha of .86 was calculated from the first round of data collection. Items from the instrument which did not load on the principal factor, generally showed ceiling effects (all participants responded in a manner indicative of positive attitudes toward Native American society and culture.

Teachers were asked to rate the quality of the instruction they received in several domains on a ten-point scale, from 1 = very ineffective to 10 = very effective. In addition, a lengthy interview was held during the August institute, supplemented by written responses during booster sessions in November. It is planned that participating teachers will be interviewed a third time during June 1999.

Assessment Results

As the Congress of Rural Special Education deadline approached, the first cycle of student standardized assessment data had not been completed. However, teacher interviews and feedback from parents, staff, teachers, and students attending the August 1998 institute were available. A summary of these results is presented below.

1. The student activities (learning experiences and recreational) at the summer, 1998 DREAMS Institute were seen as effective by all categories of respondents. Students rated most activities positively, but particularly those with hands-on components or where significant sensory experiences were noted.

2. A downside may exist regarding the degree to which hands-on and sensory-rich activities are stressed. While the motivational elements of these activities are clear, the cognitive-conceptual aspects may not be optimal. Expanding the use of "talking stations" and providing opportunities for older students to explore the subject in more depth may be ways to improve the cognitive-conceptual aspects. Likewise, conceptual continuity between activities within institutes and from one institute to the next may be helpful.

3. Subjective evidence for student learning exists in the form of unsolicited written comments from teachers regarding the increased level of maturity shown by students (as compared to when they first started attending) and their ability to handle more conceptually difficult and abstract content. Risk-taking by students in the learning activities has increased, in part due to their growing comfort with each other and the learning process.

4. Preliminary evidence exists that the level of sophistication regarding Native American cultural appreciation has increased among adult participants as a function of the efforts of DREAMS culture instructors and contact with persons from other cultures.

5. Teachers served in the program rated instruction and experiences highly. They were very complimentary regarding the usefulness of their experiences in concept-based, hands-on curriculum development; cultural infusion; and disability accommodation for their classrooms back home. They were in agreement with the content of the mathematics and science instruction and curriculum standards as presented.

6. It was difficult from teacher data (August or November) to determine a sense of any specifics related to teaching methods or philosophies beyond statements endorsing "hands on" and "child centered." For example:

    a. Despite the question being directly posed, no commentary was forthcoming regarding how the standards affect assessment, nomention was made of curriculum integration or ways to conceptually connect a series of hands-on activities in a workable curriculum plan.

b. Teachers endorsed inclusion of and accommodation for students with mild disabilities in their classrooms. However, it was difficult for them to articulate specific methods for accomplishing this.

c. Teachers endorsed incorporation of Native American culture into mathematics and science in principle, but were not forthcoming as to how this could be done (August) nor that it was being done (November). Sensitivity to and acceptance of cultural differences was endorsed by teachers as a method for accommodating Native American students and their families in schools.

7. Teachers found that consultation with parents was helpful both at the institute and at home. However, participating teachers requested that they spend more time directly with students during the institute.

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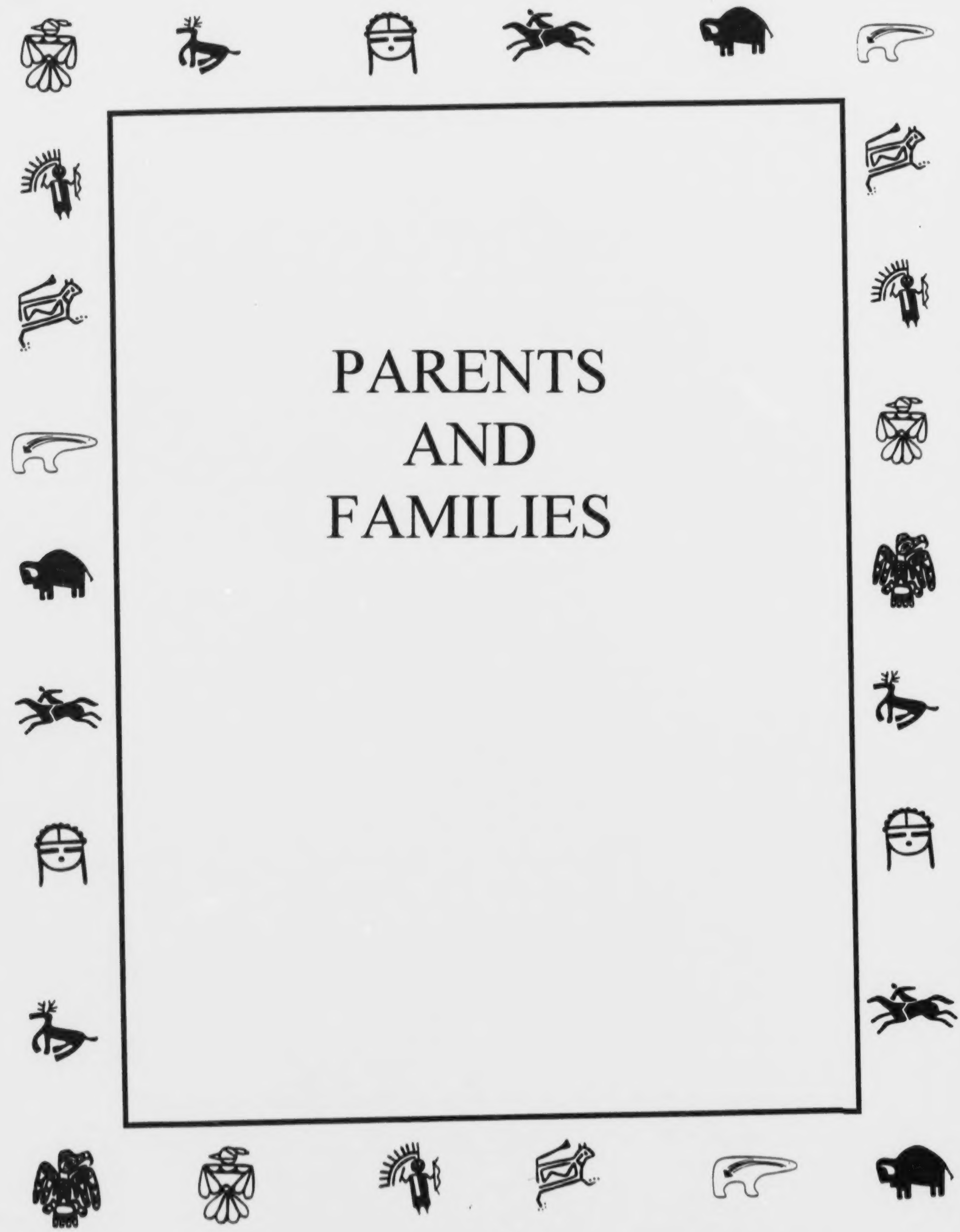

PARENTS
AND
FAMILIES

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A SENSORIMOTOR APPROACH TO FEEDING PROBLEMS IN A TODDLER WITH FETAL ALCOHOL EFFECT AND FAILURE TO THRIVE

The purpose of this poster presentation is to demonstrate the integration of sensorimotor treatment strategies into an occupational therapy home based feeding program for an 18-month-old toddler whose primary source of nutritional intake had been Pediasure. This model for early intervention can be implemented in home, school, and community environments by all team members, including caregivers and families. Intervention is provided in natural settings, which attaches meaning, improves motivation, and increases the number of opportunities for practice, according to current theories of motor control and motor learning. Although a variety of center-based and home-based programs are now legislated and available for children with special needs, rural areas present a number of barriers for families trying to access these services, such as the shortage of trained personnel and transportation issues, especially during northern winters. Therefore, it is important that families are able to reinforce recommended programming by incorporation into daily routines as easily and as often as possible. In other words, parents and extended family members can be trained to be therapeutic without being therapists.

Children with Fetal Alcohol Effect or Syndrome represent an increasingly large part of our special needs population. These children have complex physiological issues including motor deficits and increased sensory sensitivity which may contribute to feeding problems and failure to thrive. Professionals that partner with parents to meet these challenges need a knowledge of the effects of prenatal drug exposure and a theoretical frame of reference to guide intervention.

The initial videotaped evaluation investigated specific functional problems, short term and long term family goals, and current feeding behaviors.

Functional Problems and Observations:

- Primary nutrition is bottle feeding (Pediasure)
- Resists spoons and cups
- Face and mouth (inside and out) hypersensitive to touch by others
- Mouths and plays with food and feeding utensils
- Accepts small amounts of foods with salty and spicy flavors (pizza sauce), extreme temperatures (frozen peas), and crunchy consistencies (pretzels)
- Good head and trunk control for sitting balance
- Some fine motor delays ranging from 1-7 months
- Allows toothbrushing on teeth only, not gums
- Accepts very little solid food

Summary:

Although fine motor skills are mildly delayed, feeding problems appear to be more sensory-based than motor- based. Difficulty processing sensory information results in overloading to excessive sound, visual, and especially tactile stimulation. Strong food flavors and consistencies give clear messages to the nervous system: what this food is and where it is in the mouth. Coping strategies include efforts to insure sameness (e.g. chair always in same place) and resistance to external control by others (dependent and assistive feeding).

Recommendations were made for specific treatment strategies addressing the childÆs sensory regulation issues and his developmental delays. The process of task analysis and problem solving by the foster mother and therapist then led to ongoing facilitation of appropriate positioning, utensils, foods, and movement patterns which resulted in decreased oral sensitivity, self-feeding developmental gains, and increased intake of a variety of solid foods.

Treatment Plan:

- One hour occupational therapy sessions in the home, once a week, for 3 months, with a one-year follow up
- Informational materials for caregivers: articles, books, and videos, explaining normal feeding development, sensory regulation issues, problematic behaviors, and "sensory diet" strategies

Treatment Strategies:

Mouth and Hand Toys/Exploration

- To help normalize tactile sensations in mouth and develop lip, tongue, and jaw control
- To improve manipulation skills and hand/mouth movement patterns

Prefeeding Stimulation:

- Slow firm rubbing inside mouth on upper and lower gums, both sides
- Rapid tapping on cheeks (alerting)

Mealtime Skills:

- Dependent spoon-feeding: spoon presented below and in front of mouth for child to actively reach with lips and pull food off spoon
- Assistive spoon-feeding: caregiver guides by holding handle of long-handled spoon, not child's hand
- Transition from bottle to cup: MagMag cup system
  1st stage: nursing cup (nipple)
  2nd stage: spout cup (soft)
  3rd stage: straw cup
  4th stage: training cup (slotted)

Short Term Goals and Results (After 3 Months):

- to reduce tactile defensiveness: met
- to begin transition from bottle to cup: met: drinks from MagMag cups first 2 stages: nursing cup (nipple) and spout cup (soft)
- to move from dependent to independent feeding: met: independently dips spoon into food and brings to mouth upside down with good lip closure
- to increase variety of foods: met: accepts more variety of foods (crackers, grapes, raisins, banana pudding, roast beef, canned fruit, toast, cereal)

Long Term Goals and Results at Age 2 1/2 Years:

- to become independent in all self-feeding: met
- to enjoy a wide variety of foods: met: canned and fresh pears, peaches, apples; ham sandwiches with mayonnaise and butter; hamburgers with cheese, tomatoes, lettuce, ketchup; spaghetti with sauce; corn, french fries, ice cream, granola bars, hot dogs with mustard
- to eat enough quantity of solid foods to meet nutritional needs without Pediasure: not met because quantities of food are still small

Videotapes of each home visit were provided to the parent who found them helpful for reference between visits. Captures from those videos illustrate the toddler's initial behaviors, intervention techniques that proved effective, and subsequent improved eating skills, such as:

- biting and chewing
- finger-feeding
- drinking with regular glass (both hands and one hand)
- independent spoon-feeding
- independent fork use
- straw-drinking

Handouts for participants include an informal observational feeding evaluation, which collects information concerning family concerns (functional problems, desired goals), observation of feeding (positioning, reflexes, respiration, tactile sensitivity, oral hygiene, nutrition, oral-motor components, developmental behaviors, independent behaviors), and recommendations for intervention

To summarize, this photographic case study of a toddler with sensory-based feeding problems illustrates an application of the model for an individualized intervention program, implemented by the parents, who are trained to be facilitators of learning and development within the context of their daily lives. Inclusion of the parents in the planning and implementation process means that the program will be appropriate for the child and the home environment, will increase positive parent-child interactions, and will ensure continuity of intervention techniques despite changes in professional staff over time.

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A LONGITUDINAL LOOK AT RURAL FAMILY OUTCOMES: FROM BIRTH TO EIGHT YEARS OLD

This paper presents findings from an 8-year longitudinal qualitative research project involving 50 families. In-depth interviews were designed to gather information on the perceptions and experiences of parents (and other family members) of infants identified neonatally in birth crisis, or shortly thereafter, as having developmental disabilities. This paper presents case studies describing families residing in rural and small town settings. The nature of these settings necessitated the neonates undergoing medical evacuation flights to one of the two urban public hospitals in the state. This experience dramatically impacted the parents who were not transported. The unique difficulties faced by rural families, including limited availability of specialized medical and developmental services, are important factors to consider when providing special education. Recommendations for improving rural service delivery are presented based on results from intensive ongoing research on key informants who are the consumers.

This paper describes information provided by rural families including breakdowns in prenatal care that could have prevented birth crises, isolation, transportation difficulties, lack of services or trained providers. The information presented will help facilitate better communication and understanding between family members and service providers. The interview results are extremely important for professionals providing EI services, educators preparing these professionals, and policy makers who wish to improve these services.

Part C of the Individuals with Disabilities Education Act (IDEA, 1997 Amendments) recognizes the family as the strongest mediating factor in the development of very young children. The law requires that early intervention (EI) assessment and services be family directed. Research indicates that families faced with birth and developmental crises are illprepared to direct EI activities. (Winton & Baily, 1990; Haring & Lovett, 1995) Service providers need culturally sensitive strategies to inform and guide families in order to insure their full participation in the development of Individual Family Service Plans (IFSPs) (Hanson & Lynch, 1995). These plans serve as the basis for early intervention (EI) services and are designed to support the families. The underlying assumptions of EI are that: (1) families need and welcome these services and supports, (2) early interventionists know how to assist families to direct needs assessment and develop programs to meet those needs, and (3) these services enhance the development of infants and toddlers who are disabled or at-risk. Major efforts have been made, using Part C funds, to provide homebased, family centered, transdisciplinary EI services. The present research documenting implementation of this model indicates that for families in rural areas the reality of homebased EI often fails to meet the goals of IDEA.

In order to meet the intent of the law as well as to provide appropriate EI services, professionals must learn to communicate more effectively with family members. This paper will help providers better understand the contextual variables influencing how families view their identified infant or toddler and assist families to prioritize, articulate, and work towards agreed on program goals. Information to assist professionals in the early intervention process is included. The data interpretation has focused on early communication between infants and caregivers, the context of families as impacted by cultural and socioeconomic diversity, and how a transdisciplinary family focused program philosophy is perceived by recipients. The families presented here are from rural or small town settings, come from diverse backgrounds, may be struggling at low income levels, and reluctant to seek government support. The information obtained through this study reflects the uniqueness of all families and can help professionals to remember to honor family diversity.

The main goal of the first years of interviews was to record as accurately as possible the perceptions, feelings, and experiences of parents and family members in the EI process. The first interviews probed the issues of: (a) initial communications with professionals from a variety of disciplines; (b) transitions from hospital to home; (c) contacts from and referrals to additional services and resources; (d) realizations and adjustments to the infant's needs; (e) self perceptions and coping; and, (f) perceptions of assistance received from professionals and interpersonal (extended family, friends, neighborhood, community, other parents, or church) networks. Follow-up interviews further documented the nature of: (a) services, supports and/or resources provided to or sought by the families; (b) transitions to pre and formal school services; (c) changes in family dynamics and demographics; (d) family development as impacted by the identified child; (e) effects on siblings; (f) perceptions of special education; and (g) changes in the perception of their child with disabilities, particularly how their awareness and acceptance is influenced by school special services.

The subjects in this study included families residing in a largely rural southern plains state. Forty-seven percent of the families included in the study are from rural and small town locations. The sample reflected the ethnic diversity of the state. However, there was a small overrepresentation of families from Hispanic and Asian backgrounds compared to the entire state. In years one and two of the study, over sampling was conducted to identify a large number of families to account for attrition over the total years of the study. Families were identified primarily through mailings conducted in coordination with the EI program and other organizations, as well as through parent networking. Other papers are available describing: (a) cultural factors influencing service delivery for African American families, (b) extended family and tribally based values to consider when serving Native American families, and (c) follow along assistance needed for rural families who move to higher population centers for better jobs, school, medical, or special services. This paper is limited to the rural families who have participated in the study the longest and for whom there are written individual case studies. These families have years of interviews transcribed and coded. In addition, the triangulated data from significant others and records review from special services have been analyzed. This information has been placed in Folio VIEWS (Folio Corporation, 1993) to help in analysis and theory development.

Case studies of 3 families will be presented in order to better illustrate how individual family and child needs differ. The first family of interest is nontraditional, they are the Lighters and live outside of a small town that has a county Health Department. Shawn, the youngest child was identified for EI services by the Public Health Nurse because at close to 2 years old he had no language, difficulty walking and engaged in self-abusive tantrums. Shawn was eligible, demonstrating delays over 50% in cognitive, language, and social/emotional development, his fine and large motor skills were also poor. When the study began, Candy, Shawn's mother, was 22 years old but looked much younger despite her 3 marriages and children. His father, Dan, was considerably older, having numerous previous marriages and 8 other children. Both parents were unemployed, he due to a medical disability. The Lighter's had lost custody of all their children except Shawn and a 15 year old young man who lived with them in a small disorganized country trailerhome. They moved frequently and had no phone but the project followed them for 3 years, and Shawn had almost completed Headstart, when they had to leave the state.

Shawn and his mother benefited from homebased EI, Candy said, "I don't know what I would have done without them- came every week, helped me, worked with him." Candy credited EI with talking to her "welfare worker" to get her daycare. EI provided services for Shawn at home and in the daycare. He was almost toilet trained, had 35 words and had gained better control of his aggressive behavior in the group setting. At home, discipline and the lifestyle was somewhat erratic, he had less behavior control.

Candy was able to keep him and reported, "His brother couldn't talk at all at 5, but I was depressed- made me neglect him. Now I try to be a better parent." Candy had a seizure disorder, a history of suicide attempts and came from an alcoholic, conflicted family, but she became stable on her medication. She was trying to go to school because the public assistance requirements had changed and she feared losing Temporary Aid to Needy Families (TANF). Dan's condition didn't improve, he had been a biker and involved in drugs. He was thinking about training for a desk job. Dan had used his Vocational Rehabilitation school funds on classes in Law Enforcement, only to find out that with felony convictions and incarcerations he wasn't employable in that field.

The Lighters were a family who received consistent assistance from EI that helped support Candy emotionally and Shawn developmentally. The EI service coordinator worked with the Health and Human Services (DHS, state and federal public assistance) to keep this family together. The weekly home visits were the only way EI could be provided, as the family had inconsistent transportation. Getting Shawn in daycare and providing EI to support him provided a needed break for his family and a caring, stable environment for him.

Typically the research requests families identify a significant other for interviewing. This provides a perspective that is close to the family, but not living with them and data from interviews are triangulated. Candy could not identify a significant other, she had no friends or extended family members she trusted. Candy ask that we interview her EI service provider, Sue. A few other families identified an EI staff member as their significant other, they too lived in poverty, lacking social support. Most rural families had roots within some sense of community, often many generations had lived on the same land or all of their circle attended the same church. The Lighters did not stay connected to family or attend church, the friends that visited had business with Dan and did not relate to Candy or Shawn. Data from Sue reinforced information from the family interviews. Sue helped Candy provide for Shawn and her own medical needs. She kept in contact with the Lighter's DHS caseworker, this assisted Candy to keep her benefits and get Shawn's daycare covered. Sue and the research interviewers gained Candy's trust by listening to her nonjugdmentally and connecting her with needed resources.

The second case study involved the Rider family who still live in a rural town with one stoplight on Main Street. They do not have a county health department but do have their own school district with 2 buildings, one for elementary and one for secondary students. The Riders had an 8 year old daughter (Amy) and a son Trevor, who was born in a medical crisis. Trevor had a cleft palete and lip as well as neurological anomolies including no corpus callosum (this lies between the two hemispheres and provides communication between them). They live in a small, older house which is well maintained and brightly painted. Trevor was medflighted at birth, leaving his mother Tina recovering from a cesarean in a small regional hospital. Larry, his father and members of both parent's families commuted between hospitals. When Tina was able to visit Trevor, she had a very difficult time forcing herself to go to the hospital. Her own mother, who also had a cleft, abandoned her at a young age. Memories of her mother made it difficult for her to look at Trevor. Tina had nursed Amy and enjoyed a close bonded relationship with her. She had difficulty bonding with Trevor, who had feeding problems and guilt feelings about her perceived inability to mother. These negative feelings continued through his first surgery and became unacceptable to Tina when she finally understood his diagnosis (he was a year old). Up to Trevor's first birthday, Tina refused EI services, she didn't think she needed them. When he wasn't sitting up at a year, EI was invited back into the home.

The Rider family received extended family, church and community social as well as financial support. While Trevor was still hospitalized, the church held a raffle and earned over $3,000 to help with his medical expenses. Although Larry had his own business, meeting most familiy needs, their insurance didn't cover Trevor's dental care or some of the cosmetic surgery he would require. The Rider's were active members of their church, holding deep, fundamental Christian beliefs. This provided comfort, but

Tina experienced extreme guilt due to Trevor's condition. She told interviewers that each time another piece of information about Trevor was provided, she felt the devil was testing her. The Riders also believed that prayer would cure Trevor, this contributed to the delay in accepting EI services. Once EI provided homebased services, a physical therapist showed Tina how to support him towards sitting, reaching and finally pulling up to standing, she was amazed at his progress. Each member of the family worked with Trevor daily to help him achieve motor, language and play skills. This child and family did everything that EI providers suggested and by the time Trevor was 3, he had progressed so much he was not eligible for special education public school services.

The school district did not provide preschool services. They were members of a cooperative and bussed students with severe disabilities to a school only for students with disabilities out of district. This could have been a situation where the success of EI is negated by lack of follow through. However, Tina was determined to learn everything she could to help her son. She became an instructional assistant for special education at the local elementary school and started taking classes towards her teaching certification. Tina made tremendous growth, from being unable to look at Trevor, to working with him daily and developing a career surrounding him. He now attends the elementary school with special education support in regular classes.

The third family for discussion are the Patels, an immigrant family in which two Asian brothers married two American sisters. The Patels live on acreage, down a dirt road off of a rural route. They live in a one room house with a beautiful view and no neighbors. Tara and Ravi had been married ten years before the long anticipated birth of Isadora. Ravi was a media specialist who commuted to work, Tara sometimes worked but had serious health problems. Isadora was not breathing at birth and medflighted to an urban NICU. Tara's mother assisted with travel between hospitals and communication with doctors, but the family had difficulty understanding what was wrong with Isadora. This period of crisis was particularly difficult for Tara because she couldn't see her daughter for a week. Isadora was in a coma for 3 weeks, finally a diagnosis of cytomegalic inclusion disease was made. This is a neonatal condition caused by the cytomegalovirus (CMV) and can be fatal. Isadora contracted CMV inutero causing deafblindness and microcephally. Once Tara was able to establish that the only reason Isadora was still hospitalized was for oral tube feeding, she learned the procedure and took her home.

The doctors wanted to surgically install a gastrostomy (G) tube for feeding Isadora but Tara refused. The Patel's received homebased EI and this helped her fade the oral tube feeding and teach Isadora to take a bottle. As Isadora aged, Tara has taught her to eat all varieties of food and has maintained her weight so a G tube isn't necessary. Isadora is multiply and severely disabled, Tara devotes her life to caring for this child. During the first 3 years of Isadora's life, Tara reported satisfaction with EI services. The IFSP required that Isadora receive direct service from 3 therapists and a Resource Coordinator. However, services were sporadic and many weeks went by with no home visits. Due to the CVM diagnosis, there were constant changes in EI personnel because most of the staff were young women planning pregnancy who didn't want to risk exposure.

Isadora is now bussed to a special education only school. Tara, who initially feared her daughter going to school, now thinks it superior to EI because it is so much more intense. On reflection, she realizes that she did not get very much EI service and that she was the one who mainly worked with Isadora. Tara said, "They say you have a choice, but you really don't have one because you don't have a clue." The most important decision Tara made was to feed Isadora herself. This child has deafblindness and taste became a critical way for her to communicate preferences. EI was able to help with positioning and feeding. Tara said the most important thing to her was that Isadora be aware of her surroundings. EI never suggested they work on a communication program for Isadora or referred her to services for deafblind infants. Even if EI had been able to provide a hour a week of homebased services, that is not enough to dramatically impact the development of a child with Isadora's level of disabilities.

The case studies illustrate how family characteristics require different responses from EI providers. In some cases EI must provide social and emotional support to parents as well as direct service to identified children. In each case, careful listening, active perception and nonjudgemental communication skills are required. EI may also need to provide basic assistance to families in working with medical professionals. This assistance may take the form of helping families meet medical appointments or being with the family when they talk with medical personnel to help the family members understand information and to assist them to follow up on medical advice.

EI providers must be aware that they will be working in home environments that may seem inadequate from a middle class suburban perspective. One half of the families in the study receive support from the DHS. EI providers should recognize that families may not receive and may not want the governmental supports for which they are eligible. Many of the eligible rural families did not receive public assistance, some families are too proud to accept help. The EI providers may wish to help the families question this perception in a sensitive manner. Resource Coordinators need to be familiar with the required paperwork, policies, and processes for obtaining public assistance. They need tactful strategies for acquiring information, explaining the various avenues for assistance, and being able to help parents through the lengthy delays they may encounter in the process of getting a Medical Card or Social Security Income for the identified child. Also, EI providers must be prepared to assist disorganized families to understand the required documentation and how to maintain that information in order to access and sustain government support. Families may need to be supplied with organizing materials such as notebooks, resource manuals, calendars, day planners, folders, etc. to keep documents and information organized. It is also important for EI providers to understand and anticipate the diversity of family abilities in accessing assistance.

Some families with fundamental religious beliefs have chosen to home-school their children. They may concentrate on prayers for healing rather than working on adaptive responses and the development of supports for their child's needs. This interrupts school transition and can deny children special services and socialization outside of the home. It is important for EI providers to help these parents realize that the provision of special services is important and can be consistent with their personal beliefs.

The researchers are now following seven and eight year old children who were identified as having developmental disabilities in 1990. The longitudinal nature of the study has helped to raise and explore some interesting issues. For example, some young children who received early intervention have progressed so well that they were not eligible for public school services when they became three years old. The development of these and other children who were, but are no longer, eligible for special services should be monitored to ensure that possible future developmental delays are detected early or prevented. The probability of regression with underserved preschoolers with disabilities is substantial and the longitudinal data set documents the serious nature of these problems.

Some local education agencies do not have preschool programs. The state in which this study was conducted does not serve three year old children in Headstart programs and prefers to target children with mild disabilities to meet the 10% mandate for serving students with disabilities. If a school has a preschool and will accept the identified child, the probability is high that the program will be self-contained and only for children with disabilities. In these situations, families do not become familiar with more inclusionary models of service delivery and may not value inclusive programs as the child ages.

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INCLUDING NATIVE AMERICAN FAMILIES INTO THE EDUCATION OF THEIR CHILDREN

Native American families frequently have limited involvement in the education of their children. Many of these parents do not become involved in the educational system due to past educational failures which they encountered when they were students (Banks, 1994). Kroth (1997) noted the importance of parental involvement in the educational system and how this involvement can be extremely beneficial to their children's educational success. Since parental involvement is such an essential component to a child's educational achievement, educators must work diligently to get parents involved in the educational systems.

Not only are negative past experiences in the educational system a deterrent to Native American families becoming active participants in the education of their children, but many times the cultural values of the school are not a match to the cultural values of the families (Banks & Banks 1993). Since most educational systems which serve American Indians have few teachers which share the values of the Indian families, the discrepancy between their values may cause further problems in involving these families in the schools. For example, a teacher may value a student to develop good home study skills whereas at home the family may prioritize the need for other skills to be developed. Another example may be when school personnel value that parents attend school meetings or events and the parents are not able to attend as they are working or can not afford the expenses of child care for younger children in their household. In each of these cases, the parents may be negatively perceived as being ones who do not care about their child's education. The difference in values between individuals from the home and school settings and the negative perceptions that result can cause additional challenges in involving these families into the school (Kroth, 1997).

In particular many non Indian teachers have negative perceptions of Indian families and the way in which they rear their children (Dillard, 1983). These negative perceptions create serious difficulties in effectively involving the families into the school. When the families sense negative judgments toward them from teachers, they are not likely to feel welcomed by school personnel to participate in school activities. In turn, the families will frequently develop negative opinions of the teachers and the educational system. These perceptions exchanged between the families and the teachers continue to erode the involvement of the families in the education of their children.

In order for schools to become effective in involving the families of Native American children and youth into the education system, we must identify and understand the issues surrounding their current lack of involvement (Dillard, 1983). Making these families feel comfortable in the educational system is of the utmost importance. Thus, we need to identify and understand the perceptions of the families in order to ascertain ways to help families feel more comfortable with their child's education. Increasing school personnel's awareness of these perceptions is an effective initial step to begin the process of changing family's negative impressions of school personnel. It is equally important to increase awareness of how the teachers of these children view the families. With increased awareness, teachers can begin to address the negative attitudes they have towards the families. Consequently, as these impressions are identified they can be changed. As these negative perceptions are changed, the quality and quantity of family involvement should also change in a positive direction.

An Apache Reservation, located in southwestern part of the Unitied States attempted to understand the values and perception of the teachers at the tribal schools and the Apache parents of the students who attend the schools. This study was initiated when it was noted that the teachers at one school had difficulty understanding any positive ways in which the Apache parents could contribute to a child's education.

Graduate students from the University of Texas-El Paso, who were also teachers at the Apache Tribal School, conducted interviews with Apache families and other teachers at the Tribal School. These interviews were designed to probe the perceptions and attitudes of the teachers who worked at the school on how they viewed the families of their students and the way the families viewed their involvement in the school and with the teachers. Questions focused on attitudes and comfortability that each of the two groups felt about and towards each other.

Surveys were conducted through verbal interviews with each of the groups. The graduate students interviewed the parents and the teachers at an arranged time and followed a questionnaire format to obtain the information about their perceptions and attitudes regarding each other as it pertained to the educational system. These interviews were kept confidential and the respondents were not identified by the interviewers.

Following the interviews, the graduate students reviewed the surveys and looked for common trends in the responses. Common responses were noted for each group and were tabulated to determine if the teachers shared common perceptions about the families and if the families shared common perceptions of the teachers. Once the common trends were noted, the graduate students examined the perceptions to determine if these perceptions were indeed correct perceptions, i.e. the families felt that the teachers had negative judgments against them and the teachers reported in their interview these same negative judgments about the parents. Following this exercise, the perceptions that were correct and incorrect were noted.

Several common trends were noted within the analyses of the interviews. There were strong consistent patterns identified which were shared commonly amongst the teachers toward the families. Additionally, there were consistent patterns of attitudes which were shared across the families toward the teachers. The following patterns were noted in the analyses of the data.

One common trend noted from the teachers related to the social habits of the families. Teachers had a common perception that the parents in their community consumed an inappropriate amount of alcohol. This perception was generally global toward most of the families and did not specifically target individual families. This attitude was common among the teachers and was not based on factual information. The teachers had stereotypes of the families and believed this information whether or not it was true.

Many of the families that were interviewed believed the teachers had this impression of them. They stated that they thought teachers perceived them as having alcoholic problems whether or not it was true. This negative judgment made by the teachers had a definite negative impact on the family members in feeling valued and needed within the school system.

Teachers found it difficult to see how the parents and/or families might be effective in helping their children with their education. The teachers tended to not be focused on the educational issues of their students and the families, but rather on changing the families' social behaviors. Very few teachers stated that they would welcome the parental involvement in the schools. The teachers did not view the parents' involvement as being an effective way to improve students academic skills.

The families did not all share common attitudes about the school. One interesting difference was noted in the age of the parents. Data indicated that the younger the parents were, the more comfortable the parents were in the school setting and their involvement. Thus, older parents or grandparents who were in charge of rearing their grandchildren reported more discomfort in the school setting.

Language was a key factor in developing comfortability for families in the school. If the teachers spoke Apache to the parents, there appeared to be much more comfort amongst the parents toward the school and the child's education. This pattern also had an element of the age difference that was noted earlier. The older parents and grandparents were more likely to be more fluent in the Apache language than in English and, therefore, preferred to communicate in Apache when involved in a conversation with the teachers. Therefore, language and age were common links to the family's perception of comfortability in the school setting.

Very few of the families felt that their involvement in the schools was valued. The parents reported that regardless of their comfortability in the school setting, they did not perceive the teachers as wanting them to be involved in helping in the classroom, in establishing a creative curriculum for the students, or generally wanting them to participate in school activities.

Most of the families reported that they had suspicions that the non Apache teachers had negative perceptions about their family's social habits. These suspicions reportedly created some feelings of inferiority amongst the parents. These feelings of inferiority were present when the negative perceptions were both accurate and inaccurate. Thus, regardless of the accuracy of the teacher's perceptions about the families social behaviors, the judgment itself made the families feel inferior to the teachers.

Overall, the survey revealed that the teachers and the families were not cohesive in establishing an active parental involvement program in the school setting. Although the data is limited to a particular reservation and tribal school, the process that these teachers used to initiate their awareness and understanding of the families of the children who attended the tribal schools is important. The data collected in these interviews and the patterns that were revealed from the data, helped the teachers establish some possible problem areas as to why parent involvement is lower than expected from the families in their community. The teachers could see the negative perceptions of both the families and the teachers and realize how these perceptions had a negative impact on family involvement. From this realization, the teachers can now identify strategies to change these perceptions and can take the next step of attempting to increase teachers' and parents' awareness of the importance of parental involvement in the school system. The results of this study suggested that a parental involvement education program would be useful for this district to improve this awareness of the benefits of parent participation in a child's educational program.

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IDEA'97 AND PARENT INVOLVEMENT: PERSPECTIVES OF RURAL SPECIAL EDUCATION TEACHERS AND PARENTS

The family is the first social system a child knows. As such, it provides the foundation for the development of beliefs, values, and behaviors of the child. The family has a pivotal role in the nurturing, socialization, and education of its individual members (Turnbull, Barber, Kerns, & Behr, 1995). From a systems perspective, a child must be viewed as part of a family system in which the members are so interrelated that any experience affecting one member affects all members (Minuchin, 1974). Family relationships and interaction, nourished by various resources, work together to meet the needs of all members. Families in rural communities are especially important, as outside resources are often scarce. This has far-reaching implications for the field of education. Each child in a classroom represents a family system; therefore, each family influences the classroom.

Viewing each child from a family systems perspective emphasizes the importance of partnerships between school and home. Following a review of 36 studies, Henderson (1987) concluded that " . . . the evidence is now beyond dispute: parent involvement improves academic achievement. When parents are involved, children do better in school, and they go to better schools." Parents are instrumental in the teaching of academic, language, social, motor, and vocational skills to their children as well as in the managing of children's behavior (Leyser, 1985). Parent involvement is also associated with more positive parental attitudes toward teachers and schools, more positive student attitudes and behaviors, improvements in student performance, improved teacher morale, and enriched school climates (Sussel, Carr, & Hartman, 1996). In rural areas, parent involvement can provide the added benefits of much-needed classroom resources and support for teachers.

While the benefits of parent involvement in education are evident, the expectations for collaboration between teachers and parents are especially pronounced in the field of special education. The Individuals with Disabilities Education Act Amendments of 1997 (IDEA 97) states:

> "Over 20 years of research and experience have demonstrated that the education of children with disabilities can be made more effective by ... strengthening the role of parents and ensuring that families of such children have meaningful opportunities to participate in the education of their children at school and at home" [Section 601 (c)(5)(B)].

In light of this observation, IDEA 97 strengthens the role of parents and provides a means for parents and school staff to work together in a constructive manner. Special education legislation and litigation have for many years mandated parental involvement, but parents are now to be involved, to an even greater degree than before, in the evaluation, identification, placement, and planning for the provision of special services to students with disabilities.

Research has also shown, though, that barriers to parental involvement can lead to conflict, misunderstanding, and distrust between home and school (Lareau, 1994; Swap, 1993). The most basic barrier to collaboration in any setting is lack of communication and understanding. Cultural diversity, lack of training in collaboration and problem-solving, differing expectations between home and school, and school environment, are just a few of the factors mentioned when discussing barriers to parental involvement (Ferguson & Townsend-Butterworth, 1996; Swap, 1993); communication - or a lack of it - is the underlying factor in each barrier. Enhancing communication between parents and teachers is vital to achieving the collaboration called for by IDEA '97.

The unique challenges presented by rural education, and especially rural special education, can create barriers to the successful involvement of parents in their children's education. Personnel turnover, limited resources, teachers' social and professional isolation, transportation, poverty, cultural diversity, traditional values and practices, and teachers' workload impact the relationship and communication between parents and teachers in rural areas (Benson & Petty, 1990). Special education teachers new to rural areas are seldom prepared to meet the special demands which may be presented in small schools: multi-age groupings, curriculum organization and planning, administrative duties outside the classroom, interacting successfully with rural communities (Gibson, 1994). Teachers and administrators must be aware of these factors as they strive to meet the requirements for increased parental involvement in special education.

The first step in communication and collaboration between home and school is awareness of the perceptions of each regarding the expanded role of parents. In the past, studies have focused on, among other things, parents' role in Individualized Education Plan (IEP) meetings, parents' perspectives of cooperation between home and school, teachers' perspectives of the role of parents, and teachers' perceptions of working with families of children with disabilities. Despite their desire for an active role in decision-making, parents often feel their role is restricted to the giving and receiving of information (Lusthaus, Lusthaus, & Gibbs, 198 1); and, while school personnel claim to consider parents a very important part of IEP meetings, postmeeting evaluations of actual involvement of members show low participation by parents (Gilliam, 1979). Some parents indicate overall satisfaction with their level of communication with the school (Leyser, 1985), while others report feelings of frustration, anger, guilt, and helplessness (Peters & Noel, 1982). Prior to completing a course in family issues, one group of rural special education teachers indicated little desire to work with parents and expressed judgmental attitudes toward parents (Carr, 1997). (Following the course, however, teachers' attitudes toward parents were much more positive, and they indicated a high amount of willingness to form collaborative partnerships with parents.)

With the strengthening of parents' role in the special education process, brought about by IDEA 97, communication and collaboration between parents and teachers becomes crucial. Additionally, the benefits for children, parents, and teachers - benefits which may be especially pronounced in rural areas -call for perseverance in establishing and maintaining collaborative partnerships between home and school. The research reported here examined parents' and teachers' perceptions of the role of parents using Q method, an investigative strategy for studying subjective perceptions.

METHOD

The purpose of the present study was to learn the predominant beliefs of special education parents and teachers toward parent involvement. In order to achieve these purposes, Q method was employed, combining quantitative correlational techniques with an in-depth qualitative search for subjective meaning. Q methodology allows respondents to self-define tacit knowledge (McKeown & Thomas, 1988).

Subjects. Subjects included 16 parents and teachers of students who qualify for and receive special services under IDEA 97. All respondents were from rural school districts. No student ages or disability areas were specified for inclusion as a participant in the study.

Instrument. A 40-itern instrument containing opinion statements about parent involvement was developed based on a review of the literature in parent involvement and education in rural areas. Statements were structured according to the categories of parent/teacher attitudes toward parent involvement, barriers to parent involvement, tasks of parents/teachers relating to educating students, and the value of parent involvement. Instructions for completing the Q-sort were included along with a distribution matrix for recording responses.

Procedure. The Q-sorts were sent to 10 special education teachers in four different rural school districts in Oklahoma and Missouri. These teachers were asked to complete one instrument and to distribute instruments to five parents of special education students. Respondents were asked to read opinion statements and indicate, upon first reading, whether they agreed or disagreed with each statement. Upon second reading, respondents were asked to choose the two statements with which they most agreed and record those on the matrix. Next, they were asked to find the two statements with which they most disagreed, and record those on the matrix. This procedure continued until all statements were recorded, resulting in a rank ordering of statements according to amount of agreement. Finally, respondents were asked to mail the completed matrix, in a self-addressed and stamped envelope, to the researcher.

RESULTS

Q-sort data was analyzed using PQMethod 2.0 (Atkinson, 1997). A principal components factor analysis was executed, followed by a varimax rotation. The presence of factors represents a unique point of view (McKeown & Thomas, 1988) and indicates persons who rank-ordered the statements in similar configurations.

In this study, three factors emerged. The factors were designated as Active Collaborative, Hesitant Collaborative, and Unappreciated.

The five members of the Active Collaborative group believed participation in their children's education was necessary for providing needed information and increasing the effectiveness of instruction. They considered themselves equal partners with the school and believed parents should be willing to work with teachers as much as possible in planning for their children's education. Active Collaboratives felt teachers cared about both students and families, but based this belief on judgments about teachers' willingness to work with families. This group indicated possible frustration over lack of time for collaboration, but did not feel teachers should be expected to spend extra time working with parents (i.e., night meetings).

The Hesitant Collaborative group, consisting of five respondents, expressed belief in the positive effects of parent involvement in education, but felt teachers should invite parents' participation and help parents know how to participate. Parents in this group indicated willingness to be involved when instructed as to their children's needs; teachers Hesitant Collaboratives felt teachers were concerned about students and their families, and that teachers respected parents.

Three respondents formed the Unappreciated group, which indicated that parents must take a more aggressive role in participating in their children's education. They believed that parents must fight for services and that they are not respected unless they are well informed concerning special education. They expressed that the special education process is confusing and intimidating, and felt they were criticized for their level of participation. This group believed that their presence improved the effectiveness of instruction and that their input into the educational process was important. They believed that schools do not value parental involvement. The Unappreciated group did not feel teachers show a high level of interest in students or families.

DISCUSSION

There was strong consensus among respondents that parents should be involved in education and that parental involvement supports and strengthens teachers' effectiveness and improves relationships between children, parents, and teachers. All three groups agreed that teachers need training in working with parents and that meetings should be scheduled at times that are more convenient for parents. They also expressed that lack of involvement on the part of parents did not indicate lack of concern.

The study showed that the majority of teachers and parents express positive attitudes toward, and experiences with, parental involvement in education; however, there is also a small group that views parental involvement from a more adversarial position.

Several implications may be drawn from this study. First, teachers and parents agree on the importance of partnerships between home and school. Open communication regarding this belief can help ease any hesitance or adversarial feelings. Second, training in collaborative partnership skills should be included in teacher education programs. Both teachers and parents express the value of such training. Such training could also be provided as staff development, and might also be offered to parents. Third, parents desire to be involved in their children's education, but the barrier of time and conflicting schedules is very real. In order to facilitate greater participation by parents, schools must become creative in breaking down this barrier. Fourth, schools must examine their attitudes toward parent involvement and insure an openness to parents and willingness to draw parents into the school. Although some parents feel comfortable approaching the school and participating, others will need to be invited and shown how they can get involved. Exploring the resources available in parents will enrich the school program, encourage teachers, and help students move toward reaching their potential in school.

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FOSTER PARENTING AND SCHOOLING EMOTIONALLY DISTURBED CHILDREN: A TEAM EFFORT

Foster care placement is a stressful arrangement for children, their parents, and for those with whom they are placed but is a necessity when the children are abused, neglected, or when natural parents are unable to cope. For many children, foster care is a way of life as they remain in these homes for long periods or live in a succession of different foster homes (Schor, 1988). Attracting and retaining healthy foster homes is difficult due to the severity of medical and psychological problems that foster children have (Hoschstadt, Jaudes, Zimo, & Schacter, 1987). Generally, foster parents are not prepared to deal with the problems of aggression, temper tantrums, sleeping difficulties, unusual eating habits, inability to form emotional attachments, hyperactivity, depression, anxiety, and inappropriate sexual behavior exhibited by the typical foster child (Rich, 1996). Furthermore, a high proportion of foster children suffer from attachment disorder which Delaney (1993) describes as "a serious, relatively fixed emotional and behavioral disturbance in the child, whose early attachment relationships were abnormal" (p. 17). Consequently, the attachment-disordered child is often deeply disturbed, exhibiting aberrant behavior. Symptoms Delaney attributes to this disorder include sadism, violence, stealing and hoarding food, refusing to eat, superficial charm, indiscriminate attachment, compulsive lying, stealing, obsessions, passive-aggressive and provoking behaviors, and absence of guilt. Rich (1996) finds that a common consequence of severe emotional and behavioral problems in foster children is a breakdown in the placement.

Regular and special education teachers and their administrators in schools serving these emotionally distressed foster children may also experience difficulties because (1) most foster children attend schools they have never before attended and must form new relationships; (2) teachers and the foster children know that the stay in the new environment is unlikely to be permanent, leaving open the question of commitment on the part of either; (3) foster children are unlikely to enter school at the beginning of the year, an inconvenience some school staff members resent; and (4) teachers are often ill prepared to deal with the myriad of problems presented by special needs children. For example, in a discussion of schooling the growing number of children born to drug addicts, many of whom end up in foster homes, Waller (1994) pointed out that "most school districts provide no information about prenatal drug exposure to their teachers and no training in how to help drug-affected children. Most districts have little or no contact with the health and social services departments that might be able to help" (p. 31). This suggests a need for close working relationships between care givers, including schools, and outside service providers.

Rich (1996) advocates including foster parents on the therapeutic team. Building on this inclusionary concept, one foster mother, whose home was opened to emotionally disturbed foster children, worked to extend her children's treatment team to include the school's teachers and the principal. These collaborative efforts between school, home, and social service providers served to create the consistent environment these children so desperately needed. Some of the special needs children in this foster home remained in that setting for a few months, some for a few years. But all had emotional and behavioral problems that had to be addressed, both at home and at school.

Presented here are the guidelines for a working relationship forged by this foster parent and the principal of the neighborhood middle school which some of the foster children attended. Over a period of six years, seven children were placed in this foster home. The disabilities of these children were emotional rather than physical and included such diagnoses as ADHD, bi-polar mood disorder, in utero drug and alcohol exposure, post traumatic stress disorder, and Tourettes. Most suffered from attachment disorders as well and all had a history of some form of sexual and/or physical abuse and neglect. The principal of the school oversees the education of 1,200 students. The school has classes for students with severe and profoundly handicapping conditions and the deaf and serves the usual number of other special education students. Through the efforts of the principal, the special and regular education teachers at the school became deeply invested in cooperating with this foster mother in carrying out the children's treatment plans.

Background

The number of students placed in special education are increasing. "Over the past 20 years, the proportion of students identified as students with disabilities has more than doubled, and the rate of identification continues to surge" (Viadero, 1992 as cited in Allington, McGill-Franzen, & Schick, 1997). The Individual Education Plans for special needs children with psychological problems often include complex and elaborate interventions. For example, antisocial children need a highly structured environment in which they are held accountable for their every behavior and children who are unable to attach require strict consistency in their school day (Allen, 1994). Students exhibiting sexually-reactive behaviors require careful supervision (Johnson, 1991). Plans for drug exposed children call for diminished stimuli and multiple teaching techniques but are particularly difficult to develop because the field requires further research and because what is known is poorly conveyed to teachers (Waller, 1994).

Special and regular education teachers struggle to remain within the law in carrying out such IEPs and, for the most part, do so without complaint. But the introduction of a steady turnover of foster children is unlikely to be met with enthusiasm by even the most long suffering staff. These children have been removed from either their natural parents or from another foster home and may be moved again if the current placement is unsuccessful. If the child's problems become too severe, the result may be placement in a long-term residential treatment center, a consequence of which the child may be keenly aware. Many foster children know that returning to their natural parents is partially contingent on their behavior in this new setting, a possibility which may induce conflicting emotions. In a study of 95 foster children, Johnson, Yoken and Voss (1995) found that few had been active participants in the decision to move; over half reported that changing schools was difficult; most found it hard to make new friends and get acquainted with new teachers; and one third missed most their friends from their previous lives. Academically, most children in out-of-home care perform below grade level and suffer from low self-esteem (Barth, 1988 as cited in Johnson, Yoken, & Voss, 1995). A further complication is the school's lack of history with these children or with the foster parents. Most arrive without school records and have rarely been in one setting long enough to be tested for handicapping conditions.

Balancing all of these concerns calls for a unique relationship between the foster parent and the school administrator who is ultimately responsible for making the transition successful. Yet collaboration with parents may be the least of a principal's concerns. "Extensive and complex regulations, conflicting court decisions, and the proliferation of lawsuits have created a climate where educators are continually reminded to remain focused on legal issues when making decisions about special needs students" (Schroth, 1999). Furthermore, principals' decision making is hindered by their inadequate training about special education. In a survey of principals, Valesky and Hirth (1992) found that many states do not mandate knowledge of special education in preparation programs. Other states require either no information or a bare minimum of knowledge of special education. Concurrent to legal pressures and inadequate preparation, principals are now expected to alter their role in overseeing special education. "New perspectives of special education leadership call for more collaborative rather than authoritarian behaviors. Team building and inclusionary practices are replacing the ...exclusionary practices of the past" (Pazey, 1993, p. 4). Today, principals who are most successful in overseeing special education programs take a personal interest in special needs students and build a positive working relationship with all who have an invested interest in the child while vigilantly attending to legalities as well.

School administrators today must tread carefully when it comes to offering services to special education students. Parenting foster children with emotional and behavioral problems is time consuming, frustrating, and often exacerbated by unsuccessful school experiences. The following suggestions are provided from the experiences of two women, a school principal and a therapeutic foster mother, who managed to collaboratively increase the academic, behavioral, and social success of some foster children.

1. Communicate Possibly the most important factor in the working relationship between the foster parent described here and the school her children attended was the degree to which communication became an everyday occurrence. Before bringing a child to the school, the foster mother met with the principal to inform her of the new placement and plan how to best meet the child's needs. A teaching team that would be most appropriate for the child was determined, followed by a planning meeting between the foster mother, principal, and teachers. Potential problems were discussed and plans made to ease the transition to the new school. After enrolling the student, the foster mother maintained close contact with the teachers. For example, Tom, a foster child, frequently skipped classes so the arrangement was made for each teacher to call the foster mother immediately if Tom was not in class. In turn, the foster mother made frequent, informal visits to the school to check on Tom's progress.

Referral and testing for special education of foster children with emotional disorders is usually incomplete or absent altogether because of their parents' lack of concern or because the children have been moved frequently. Treatment plans must be based on social service's report which is generally developed from one visit with a psychiatrist. Without adequate records and while testing was initiated, communication between the teachers and the foster parents became essential. As each experimented with interventions they communicated their successes and failures, thus learning from one another. Such communication took a number of forms: phone calls, notes, and face-to-face discussions. The teaching team, principal, and foster parents frequently engaged in brainstorming sessions followed by informal conversations to prevent minor problems from escalating.

2. Make Teachers a Part of the Treatment Team This principal was believer in teaming, a scheduling arrangement that allows 4-5 teachers to be responsible for a group of about 125 students, forming a school-within-a-school. Some advantages of teaming are that 1) teachers get to know and care for pupils, 2) stable friendships can develop, and 3) the teaching team collectively assumes responsibility for

each student's learning and meets with parents as a group (Schroth, 1997). Communication between the foster mother and this team of teachers developed to the extent that the school staff became an extension of the child's treatment team. Together they planned interventions, changed approaches when they failed, and celebrated successes. Consequently, loopholes in treatment plans were quickly closed as students experienced consistency between school and home.

3. Set Realistic Expectations This group of teachers, the principal, and the foster mother made it a rule to avoid blame. The foster parents did not expect the principal and her staff to "fix" the child (an attitude frequently encountered); the school did not point fingers at the foster parents when a child misbehaved. As a team, they tried what they thought would benefit the child and, if they failed, they tried again. They approached each problem with trust in one another and with extreme humility, knowing that failure was a realistic possibility. The trust was bolstered by the working relationship between the school and the foster mother. The foster mother worked with the school on behalf of both her own and her foster children, earning her the title of "one of the staff".

4. Become Creative in Making Treatment Plans The parent/school team conducted numerous brainstorming sessions as they sought to meet the needs of the foster children. Their problem solving became a forum for creative thinking. Consequently, nontraditional approaches were tried, many quite successfully. For example, these foster children tended to gravitate toward peers who influence them negatively and schedules had to be adjusted when unsatisfactory attachments began to form. For one child, Tarry, eating lunch with the principal was a successful alternative to his forming unhealthy relationships at lunch time. In another situation, alternative scheduling arrangements were made when one foster child learned to place teachers in opposition to one another, sabotaging his own success and when Tom, the child with attendance problems, skipped class the foster mother attended class with him for several days. Creative solutions extended beyond classrooms. Plans were made for the school counselor to hold group counseling sessions with foster children when the foster mother overheard two foster children discover with surprise that neither could be in the presence of their natural parents without supervision. Both children knew that they were "foster kids" but were not aware that circumstances surrounding that condition were similar.

Conclusion

The working relationship between a mother in a treatment foster home and the neighborhood school described here has served to successfully reach the needs of a small group of foster children with emotional problems. In this situation, the principal's attitude of care and concern for children coupled with strong leadership created an atmosphere for teachers to be successful with their students, no matter what the children's needs. The foster mother's willingness to become deeply involved with her foster children not only at home but at school as well became a catalyst for creating the expanded treatment team Rich (1996) advocates. Can this partnership be improved? The principal and the foster mother think so. They plan to (1) expand staff development to include teacher training on needs and issues specific to foster children, (2) seek funding for more staff so these students have someone to connect with on a daily basis, and (3) provide a support group for new foster parents. Teaching other foster parents to view parenting as a profession is a goal for this successful foster mother.

This principal and foster parent's constructive approach to handling a situation that could have easily become adversarial is a tribute to both. Their respect for each other and humble attitude toward solving difficult and often unusual problems has aided a handful of children in desperate circumstances. Can other schools experience a greater degree of student success through collaborative and cooperative efforts of parents and administrators? These authors think so.

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USING THE INTERNET TO CONNECT PARENTS AND PROFESSIONALS: THE CHALLENGES

Imagine a rural educational setting where you are serving students and their families living in the remotest possible setting. What this is really like is more challenging than you can imagine.

Alaska is a state that, if superimposed over the 48 contiguous states of the United States, would stretch from the Pacific Ocean to the Atlantic Ocean (over 2,700 miles from East to West). We think nothing of hopping on an airplane and flying 1,600 miles to remote villages on the other side of the state.

The population is very small (approximately 600,000) and one third of the population in this vast expanse (over 245 towns and villages) have no access to a road network. It has the lowest population density in the nation, only one person per square mile (1991), compared to 71.2 people per square mile for the entire U.S.

As I write this, the snow banks in front of my house in Douglas are over eight feet high. Further north in Fairbanks they have been suffering with more than a week of temperatures ranging from -50 to -60 degrees Fahrenheit. Meanwhile at the PARENTS, Inc. main office in Anchorage (the only large city in Alaska, with about 225,000 people), the moose are stomping around downtown and in the PARENTS, Inc. parking lot looking for food.

Flying to the remote Pribilof Islands in February can mean preparing to be stranded by weather for over a week and sleeping on wrestling mats in the special education teacher's classroom. It can also be as fun as catching an "air taxi" from the Ketchikan float plane docks and being dropped off in front of a tiny island school (Alaska has thousands of islands).

Many teachers and special education professionals in Alaska must serve students over a wide distance. Many locations are so isolated that they cannot attract qualified applicants for positions, even when they can pay for them. When a teacher or professional does finally move to an isolated village, they sometimes find that there is no house or apartment for them, and no hotels or other lodging. The turnover rate for school staff in some schools districts, such as the Aleutians East School District, is over 70% a year.

A common solution to this predicament is flying teachers and professionals into these villages, but this is very risky during the winter. Itinerant teachers and special education professionals are very common throughout Alaska. Many professionals must fly regularly to over 20 villages a month to provide services. Even communicating through mail can be difficult. Some villages will spend as long as a month with no mail service because of weather conditions.

A few rural schools districts with more money (notably the North Slope Borough School District) have set up expensive live video conferencing equipment to all their village schools. One teacher located in Barrow can simultaneously teach in 10 village classrooms at once. However, most school districts don't have the money for such a solution. In fact, many village have almost no monetary economy at all. Numerous villages throughout Alaska continue with a subsistence way of life as they have for thousands of years. They hunt and fish for their food, and barter with each other.

In the midst of all this, you must also consider that much of Alaska has very poor health and sanitary conditions. Many villages still have no sewer systems or garbage collection systems. At a recent workshop I gave for parents of children with disabilities in the ancient Tlingit village of Hoonah, the parents insisted on proudly giving me a tour of their new garbage dump.

As a consequence of the poor health and sanitation, Alaska has a considerably higher rate of childhood disabilities than other states. This, coupled with the difficulty in getting appropriate services to them, create an extremely challenging situation. Families throughout Alaska express extreme frustration in trying to get services, trying to communicate with professionals, and finding information to help themselves. Many families have had to give up their children to foster homes in locations that could provide services, or have had to uproot their lives and move.

Many approaches to service and communication problems in Alaska have been tried. Most have met with limited success. A new solution has presented itself that seems to have a much broader ability to overcome the geographic and weather barriers of Alaska. This solution involves the Internet.

THE INTERNET AS A SOLUTION

The number of Alaska schools with Internet access has risen from 60% in 1995, 70% in 1996, and finally to an estimated 90% by the end of 1998. Federal E-rate grants have only just started being received by school districts in Alaska to complete connecting their schools to the Internet. The Alaska Department of Education has no doubts that 100% schools in Alaska will be connected to the Internet by the year 2000.

Some schools report having Internet access in only one or two computers in their school. However, nearly all of them have written technology plans showing that they plan to greatly expand the number of computers by the year 2000.

Various sections in the Alaska Department of Education are reporting an increase of more than 25% a year in the number of e-mail requests for information from parents and professionals. PARENTS, Inc. itself has seen an increase of almost 75% in the 1998 of e-mail messages. Clearly this media is being used at a rapidly increasing rate in Alaska.

THE INTERNET FOR FAMILIES WITHOUT COMPUTERS

Alaska's schools clearly are becoming wired. But what about parents? How can parents of children with disabilities use the Internet to connect with professionals when many of them live with very little money and have no computers? First, it is only an assumption prevalent in middle-class American communities that connecting to the Internet is done via a home computer. In Alaska, most rural schools double as community centers, and their libraries are also the community library. Most villages also have a native corporation or tribal council office. These sites all have Internet access and are primary gathering locations for residents. In addition, there are numerous initiatives, described later, that are putting Internet-ready computers directly in the hands of low income individuals.

A common practice in many of the schools in Alaska is to hold family Internet evenings. Parents are invited to come to the school to see what their children are doing on the Internet and to use the Internet connections themselves. Frequently teachers conduct beginning introductions to the Internet workshops for parents.

Most public libraries in Alaska, which are frequently the school libraries in small villages, have public-access Internet computers. These community libraries regularly hold beginning Internet classes for the public. Other community organizations, including PARENTS, Inc., have set up public Internet stations at numerous locations around the state. Several organizations have recently announced plans to expand this concept to more communities.

Organizations and schools also hold scheduled times for parents to come and use Internet connections to participate in live discussion groups on disability and parenting subjects. By doing this as a group, parents who have no Internet skills can get help from the sponsoring school or organizations. Parents also have a chance to discuss what is happening with other parents and community members who are present, as well as discuss issues with an international group through the Internet. I have personally held several such gatherings at my own house, setting up as many as three simultaneous computer connections for parents to share posting questions on Internet bulletin boards or participating in live chats.

Another common solution is to donate older computers to families. Several agencies, including PARENTS, Inc., have regularly donated computers to families who could not afford one. These computers are refurbished and loaded with software that will help both parents and child, and a modem, when possible. This type of program has been very difficult to manage and organizations that refurbish and distribute older computers do so sporadically. The main difficulty is the time involved and finding people with a high degree of computer expertise and enough time to manage the program.

The fastest growing option for connecting parents without computers to the Internet is to lend computers to the families. Numerous schools in Alaska have received technology grants that allow them to loan newer computers with software and Internet connections to families. Alyeska Central School, Alaska's statewide correspondence school, and Delta Cyber Charter School, an experimental online K-12 school, both loan computers to families who do not have any.

It is possible for families who use to borrowed computers, libraries, or other public access computers to have their own e-mail address. Numerous free Web-based e-mail account services exist, such as www.hotmail.com, and at www.yahoo.com. E-mail on these services can be read directly from any web browser on any computer with an Internet connection.

There are an increasing number of opportunities for connecting families to the Internet who do not have connections. The biggest problem is to actually convince technologically timid parents to try it.

PROMISING STRATEGIES

There are numerous exciting strategies being carried out or in the planning stage to use the Internet to connect parents and professionals.

Interactive web libraries, notably at PARENTS, Inc (www.alaska.net/~parents/), allows both parents and professionals to browse the card catalogs of the PARENTS, Inc. library and automatically check items out. Items are mailed within Alaska at no charge. PARENTS, Inc. was recently awarded a grant to expand this program to offer connections to other organizations' libraries through the same automated request system. Comments from parents and professionals have been extremely positive.

Web-base chat groups have proven to be an effective way to connect parents and professionals. Most of these chat groups are moderated and scheduled for specific times. During those times parents and professionals from around the world can gather for live discussions on the specific subject posted. Parents have stated that this type of experience is very excited, but also a bit overwhelming. The technology usually only allows for short statements at a time. You also have to sometimes contend with hundreds of people talking at once. The older IRC (Internet Relay Chat) technology is no longer used very much in Alaska since it is not as convenient and easy to use as the newer Web-based chat groups.

Web-based bulletin boards provide a way for individuals who do not have their own e-mail account to post messages and come back in a day or two to see what answers have been posted. I set up one myself on the Alaska Career Information System site (http://www.educ.state.ak.us/AKCIS/) which is used to discuss career related topics. This provides an excellent way for people to visit and search the discussions to see if anyone has asked or answered a similar question, especially on major national sites.

E-mail discussion lists are one of the most popular ways to connect parents and professionals. Numerous lists allow people to join discussions on various subjects. I participate in an international autism list that has several hundred participants. Discussions have very friendly and many people feel that they start to know each other personally. Many problems are solved in group discussion between parents and professionals in these discussion lists. In an e-mail discussion list, a person sends an e-mail message to the list e-mail address. The message is then forwarded to all participants. People can then replay directly to you or send it to the list e-mail address for everyone to read. I have had several difficult problems with my son solved over such e-mail discussion lists.

Person-to-person e-mail messages are a common means of communication between parents and professionals. Many parents have e-mail at work and can exchange messages with teachers. This solves the problem of "telephone tag" that frequently occurs otherwise. I myself use it frequently to talk with staff. E-mail messages are also frequently received by PARENTS, Inc. and similar organizations. These questions and requests for information get immediately answered or forwarded to people with expertise around the state.

A very useful idea that is used by Dzantik'i Heeni Middle School in Juneau is a homework e-mail list. Teachers type out a few sentences into a document on the school's network at the end of each day describing what homework was assigned in their classes, or if there is no homework. One teacher is assigned to take that document at a specific time at the end of the day and e-mail it to a list of parents who have provided their e-mail addresses. Parents receive this list at work or home about the time their children have left school. This e-mail frequently includes assignments made by the special education teachers as well. For parents of children with poor verbal skills or who have trouble communicating (such as children with autism), this provides an excellent way to find out what has been assigned. It also provides a way for parents to see what other teachers are assigning and what students in the regular education programs are getting as homework. For teachers, this takes much less time than handwriting notes to different parents, and can considerably reduce the time they spend on trying to communicate with families. For parents, it ensures more consistent communication on a daily basis. At least 75% of parents in that schools appear to receive this e-mail service. It helps that most parents have e-mail at work, even if they don't at home.

The Delta Greely Cyber Charter School is a new experimental school for students in grades 7-12. It was given conditional approval by the Alaska State Board of Education in 1997 to accept students anywhere in Alaska. The plan was to provide online, Internet-based, education directly to families' homes. The instruction is provided live using various Internet conferencing software and technologies. Parents who do not have home computers are loaned one and assisted with obtaining Internet accounts. The school initially estimated that it would have about 100 students. By the end of the first year over

1,800 families were enrolled. The cyber school has invested considerable attention to connecting parents with teachers through the Internet. This is done through Internet conferencing, live chat technology, and e-mail. This concept has proven to be extremely popular. A recent surge in enrollment of students with special education needs has sent the program hurrying to obtain help from various agencies, as well as working out a special arrangement with PARENTS, Inc. to help provide services to parents. The program has been so popular that several other school districts have requested permission to start similar programs. At present the Alaska Department of Education has denied such requests. The Alaska Department of Education is preparing to do a more thorough study to see how well this concept is working and to determine if more districts should be allowed to function as virtual schools without school district boundaries.

Alyeska Central School is Alaska's statewide correspondence school run out of the Alaska Department of Education. This school has been rapidly making the switch from paper-based communication, to computer and Internet-based services.

Gail Haynes, counselor for the school, stated that there has been a great increase in parents communicating with staff and teachers through e-mail. Many parents have found that e-mail is easier for them to communicate with than over the telephone. Haynes suggested that this might be due to the fact that e-mail can be delivered through a local phone call to an Internet service provider, rather than making a long distance call. Long distance calls can get disrupted by solar flares and bad weather, and when you place a voice call, you frequently get voice mail instead of a person. In contrast, e-mail is checked by the teachers several times a day.

Many Alyeska Central School families who do not have computers are shipped computers on loan. These computers are loaded with different software, but not always with a modem. Haynes states that this is something they are working on adding since it is very important to encourage better communication. Some families they serve live on isolated islands that only have radio telephones with poor reception. These families frequently take their small boats out to neighbor islands where more reliable telephone communication exists to contact the school or check e-mail. For these parents, the school has provided laptop computers that they can take with them and plug into telephone lines on nearby islands.

SUMMARY

Alaska has been forced by geography and weather to look at numerous innovative solutions to improving communication between families and schools. The Internet is already showing a much heavier and widespread impact than any other technique that has been tried. The numerous programs in place to provide computers and Internet connections for those who do not have any are rapidly expanding.

The numbers of participants and other statistics are showing that this is one of the most popular solutions to communication. Anecdotal evidence suggests that it may be one of the most effective. Representatives from the Alaska Department of Education state that several studies will be conducted in the next few years to determine whether this trend is really making a difference.

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PROFESSIONAL DEVELOPMENT

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PIONEERING EDUCATION LEADERSHIP FOR 2001: OKLAHOMA'S CSPD INITIATIVE FROM A RURAL REGIONAL PERSPECTIVE

INTRODUCTION

The purpose of this paper is to share information about Oklahoma's Comprehensive System of Personnel Development (CSPD) statewide initiative, from the perspective of one of the four rural regions in the state. The statewide CSPD effort in Oklahoma provides a vehicle for collaboration and coordination of professional development, preservice, and inservice training activities for personnel who work with students with disabilities. The target audience for this paper includes regular and special education personnel from common and higher education, related service providers, and interagency personnel involved in providing services to persons with disabilities from birth through adulthood.

Sharing information about Oklahoma's statewide CSPD initiative is important, due to the increasing focus on CSPD, which has been evident in the reauthorization and subsequent amendments to the Individuals with Disabilities Education Act (IDEA). The Oklahoma initiative began with leadership from the Oklahoma State Department of Education Special Education Section. The initiative involves stakeholders from all agencies across the state and includes parent participation, as well. On-going since September of 1994, the initiative emphasizes regional strategic planning and the continuous participation of "regional action teams" working toward a shared vision and an on-going strategic plan for CSPD.

The regional action teams allow for strategic planning on a grassroots level to address the "ruralness" of each region. The activities of one of the four regional action teams will be discussed to provide an explanation of the process of regional strategic planning. The development, implementation, and subsequent impact of the region's activities on regional and statewide levels will be reviewed. The potential for replication will also be discussed.

THE NATIONAL PERSPECTIVE ON CSPD STRATEGIC PLANNING

The national perspective on CSPD strategic planning has evolved through changes in federal regulations, renewed emphasis on professional development across programs at the federal level, and pertinent issues which drive change, such as teacher shortages in special education. A brief review of the history of CSPD in special education and rehabilitation legislation includes the following highlights:

- P.L. 94-142, Part B (3-21) regulations implemented in 1975, included CSPD components of preservice, evaluation, needs assessment, collaboration, dissemination, technical assistance, and continuing education;
- P.L. 99-457, Part H (0-3) regulations implemented in 1990, included a CSPD component;
- Vocational Rehabilitation regulations added a CSPD component in the early 1990's;
- P.L. 101-476, reauthorization of P.L. 94-142, directed State Education Agencies to coordinate and facilitate CSPD with support of stakeholders (IHEs, LEAs, etc.) and added Part H (families), along with Vocational Rehabilitation;

Throughout this history of CSPD, most states addressed fragments of CSPD components and may or may not have included all of the components.

Additional renewed emphasis, at the national level, for changes in professional development and CSPD has been generated through the U.S. Department of Education, the Office of Special Education and Rehabilitative Services, and the Office of Special Education Programs. The perspective from these agencies is that professional development and CSPD are a vehicle for change for quality education. The Secretary of Education, Richard W. Riley, established the U.S. Department of Education's Professional Development Team. The team's mission was to examine the best available research and exemplary practices related to professional development, and to summarize lessons learned from this knowledge base in the form of principles that might inform practitioners and policymakers across the country, and guide the Department's efforts in the area of professional development. The mission statement and principles of professional development, now part of the *Federal Register*, emphasize the belief that high-quality professional development reflecting the principles, which are grounded in the practical wisdom of leading educators across the country, will have a positive and lasting effect on teaching and learning. The mission of professional development, adopted by the U.S. Department of Education, is "to prepare and support educators to help all students achieve to high standards of learning and development." The mission and underlying principles can be found in the U.S. Department of Education brochure, "Building Bridges: The Mission & Principles of Professional Development." The CSPD umbrella, which includes Part B, Part H, and Vocational Rehabilitation, embraces the mission and principles of the Department, and includes collaboration as the key to quality education through quality personnel by taking the proactive role of strategic planning to address data collection, personnel preparation (preservice), continuing education (inservice), education research, promising practices, and dissemination. Federal regulations specifically impacting CSPD are included in the IDEA Title 34. Title 34 of the Act includes CSPD requirements under Part B (Sections 300.139, 300.153, 300.224, 300.370, 300.380, 300.381, 300.382, 300.383, and 300.555), Part H (Sections 303.360 and 303.361), and Vocational Rehabilitation (Section 361.18).

HISTORICAL INFORMATION ON OKLAHOMA'S CSPD INITIATIVE

Oklahoma's CSPD initiative began in 1993. In September of that year an 8-member delegation participated in the CSPD Institute sponsored by CEC and the National Institute on CSPD Collaboration. The 8-member delegation established the CSPD Leadership Team for the state of Oklahoma. Through the team's participation in the CSPD Institute a "vision" was created and "strategic planning" began. The team reviewed existing CSPD strategic planning models from states that were already involved in implementation. Oklahoma's CSPD Initiative incorporates facets from the Montana model. As the strategic plan was being developed, it became apparent to the CSPD Leadership Team that a major, critical link was missing—involvement with and participation of higher education stakeholders. The Oklahoma State Department of Education CSPD Leadership Team sponsored Oklahoma's first "Pioneering Education Leadership 2001" CSPD Institute, including representation from all private and public universities in the state, as well as other stakeholders. Participants were divided up regionally to begin the process of brainstorming, problem solving and strategic planning.

The data and theoretical base which was the impetus behind the Oklahoma CSPD initiative began with the technical assistance provided to the CSPD Leadership team, through the CEC and the National Institute on CSPD Collaboration. Karl Murray, the Director of this project, has been involved in CSPD at both the state and national levels for 19 years. He has been one of the main presenters at both of Oklahoma's "Pioneering Education Leadership 2001" conferences held in 1994 and 1996. His experience and expertise led to the presentation of research-based information and theoretical practices which address systemic school reform and the changing role of SDEs, empowering leaders to lead others to implement change, creating a vision and translating that vision into reality, and the five disciplines of learning organization from Peter Senge. The following articles discuss the research and theoretical practices:

- "Systemic School Reform: The Challenges Faced by State Departments of Education" by Susan Follett Lusi, which addresses the changing roles of SDEs (i.e. teaming, defining and refining implementation as work progresses, and judging their performance in terms of outcomes produced);
- "Empowering Organizations, Empowering Leaders" by Clay Carr, which theorizes that in empowered organizations, empowered leaders lead others to implement change and achieve goals;
- "Managing the Dream" by Warren Bennis, which references a business-based leadership trait of creating a vision and translating that vision into reality; and
- "The Fifth Discipline: The Art and Practice of the Learning Organization, A Conversation with Peter Senge" edited by Colleen Lannon Kim, which defines *building a shared vision, personal mastery, mental models, team learning, and systems thinking* as the five disciplines.

Oklahoma's CSPD initiative has been successful due to the implementation of practices based on vision and leadership theories, as well as the training and technical assistance provided through the National Institute on CSPD Collaboration.

STRUCTURE AND ORGANIZATION OF OKLAHOMA'S CSPD INITIATIVE

The structure and organization of Oklahoma's CSPD initiative is based on the involvement of all stakeholders at a regional level. The regionalization concept permeates the initiative at all levels. The following heirarchy depicts the structure and organization of Oklahoma's CSPD initiative:

- CSPD Vision
- Oklahoma State Department of Education CSPD Leadership Team
- CSPD Leadership Regional Representatives
- CSPD Implementation Council and Strategic Plan
- CSPD Regional Action Teams

DEVELOPMENT OF OKLAHOMA'S CSPD VISION AND STRATEGIC PLAN

As previously stated, the 8 member CSPD Leadership Team, in 1993, established the initial "vision" and began strategic planning. In 1994, at the first "Pioneering Education Leadership 2001" CSPD Institute the "vision" and strategic plan were presented to all stakeholders. Through the process of regionalization, developing regional partnerships, and regional strategic planning, the vision was refined. The unified vision statement, officially adopted in January of 1995, states:

> *The Oklahoma vision is for children, youth, families,*
> *professionals, and communities to work together to create an*
> *accepting, respectful, and accessible environment for all.*
> *Community members and all individuals working with children*
> *and youth will collaborate to assure family involvement,*
> *provide smooth transitions at all stages of the educational*
> *process, and ensure that all children and youth are successfully*
> *prepared for participation in the community.*

THE REGIONAL STRATEGIC PLANNING PROCESS

Regional strategic planning was initiated at Oklahoma's first "Pioneering Education Leadership 2001" CSPD Institute. Stakeholders representing vocational rehabilitation, general education, special education, higher education, administration, parents, legislative members, vocational-technical education, related services providers, and consumers from the four regions in the state were invited to participate in the institute. The four regions, previously identified by the CSPD Leadership Team included Central, Northeastern, Northwestern, and Southern. The process of developing regional partnerships and regional strategic planning began at the institute. Stakeholders from each region worked with a facilitator to begin this process, which included environmental scanning, identifying and prioritizing needs, and identifying Regional Action Team Representatives (chairpersons) to lead Regional Action Teams and serve as members of the CSPD Implementation Council. Participation of Regional Action Team Representatives as part of the CSPD Implementation Council assures that regionalization remains an integral part of the statewide CSPD initiative. The Council also provides for membership of representatives of higher education (IHEs), local education agencies (LEAs), the Oklahoma Regents of Higher Education, parents, advocacy groups, Vocational-Technical Education, Vocational Rehabilitation, and others as appropriate. The mission of the CSPD Implementation Council is to:

- actively develop an on-going strategic plan to implement the CSPD vision;
- provide a forum to discuss issues related to personnel preparation and retention on a statewide basis;
- provide advice and oversight for changes in existing policy and rules affecting personnel development;
- recommend changes in delivery of preservice and continuing education;
- promote personnel development opportunities for all individuals, including families and general educators, involved in the education of students with disabilities; and
- provide leadership and direction for CSPD Regional Action Teams.

The CSPD Implementation Council meets on a quarterly basis, annually, to maintain the direction of the initiative. The Council also conducts an annual 2-day planning meeting during which they review regional priorities, state priorities, regionalization, and the CSPD Strategic Plan. This allows for changes to be made in the statewide CSPD initiative as needed.

The role of Regional Action Teams is to provide a forum for communication, to identify regional personnel development needs, and to implement activities based on those needs. The regionalization concept encourages an efficient use of resources statewide. Beginning with their initial experience of regional strategic planning at the first "Pioneering Education Leadership 2001" CSPD Institute, Regional Action Teams have the following purposes:

- provide regional voices to inform the Oklahoma State Department of Education of regional needs;
- provide regional involvement in CSPD decision-making;
- provide an informed network to provide input for the CSPD Leadership Team;
- assist in identifying stakeholders in planning for subsequent CSPD Institutes;
- provide a vehicle to implement positive change statewide;
- provide assistance with recruitment, retention, and training to improve services to children and families;
- assist in addressing statewide special education concerns;
- include other service providers in the network;
- continue to identify stakeholders;
- keep administrators involved and link with LEAs;
- link with service providers, IHEs, general education, special education, Early Intervention Units (Part H), Oklahoma State Department of Education, and other state agencies such as Vocational Rehabilitation and Vocational Technical Education;
- insure state and local parent involvement;
- make community connections;
- expand statewide CSPD Strategic Plan and set priorities for implementation;
- identify and prioritize needs;
- insure proactive implementation;
- move CSPD Strategic Plan to each region/community;

- help facilitate the development and implementation of regional/community plans to assist with the statewide CSPD Strategic Plan;
- avoid parallelism in organizations/entities;
- begin political action on pertinent issues related to CSPD;
- focus on awareness, education, and information sharing (i.e. disability awareness);
- work to support joint special education/early childhood certification; and
- develop mechanism for dissemination of regional staff development information.

Each Regional Action Team has taken its own grassroots approach to address regional priorities and to develop activities to support the CSPD Strategic Plan. Regional Action Team participation of CSPD Leadership Team/Implementation Council members ensures that each of the regions annually revisit the Strategic Plan and refocus on regional strategic planning. Each region engages in the process of reviewing activities conducted in relation to the Strategic Plan. Regional Action Teams revisit the regional strategic planning process of identifying all stakeholders and conducting environmental scanning. The regions then proceed in identifying and prioritizing needs for the upcoming year. This cycle has proven effective for the continued proactive implementation of the CSPD Strategic Plan. A second "Pioneering Education Leadership 2001" CSPD Institute was conducted in 1996, which also helped in refocusing of the statewide initiative.

SOUTHERN REGION CSPD ACTION TEAM ACTIVITIES: REGIONAL STRATEGIC PLANNING THROUGH IMPLEMENTATION and IMPACT OF REGIONAL AND STATEWIDE LEVELS

The Southern Region CSPD Action Team covers the largest geographical region in the state. During the first regional strategic planning session in 1994, the stakeholders were overwhelmed by the geography issue faced by the region. Through the process of environmental scanning and the identification of priorities, it became apparent that several issues were of common concern. The Southern region identified three main priorities that correlated to the CSPD Strategic Plan. These priorities included:

- increasing the supply of low incidence teachers and ancillary staff;
- formalizing methods of cross group/cross agency information exchanges; and
- inviting, welcoming, and enthusiastically including higher education while offering resources to support IHE initiatives and efforts.

Beginning with these three priorities, the region began its own grassroots approach to the statewide CSPD initiative. The priorities have remained essentially the same since the beginning of the initiative due to great and on-going needs in these areas.

The Southern region's Regional Action Team Representatives currently include a higher education person, an outreach coordinator for the Oklahoma School for the Blind, and a special education teacher/federal programs coordinator from an LEA. The region elected to conduct its meetings on a quarterly basis, in between CSPD Implementation Council meetings. Meetings for the year are scheduled in the spring or fall, to coincide with the schedule for Implementation Council meetings. The meetings are rotated around the Southern region to allow participation of team members from across the southern half of the state. Meeting locations are chosen with a purpose to highlight a facility or program of interest to team members. The meetings follow an established agenda, with a flexible schedule (11:00 a.m. – 1:30 p.m.) to allow for travel time for all involved. Lunch is included as part of the meeting schedule. The meeting agenda consists of welcome, introductions, State & Federal Update, Task Force Group Reports, Discuss This and/or Next Year's Projects/Training, Overview and FYI, and Close Meeting. This has proven to be an effective format for the continuation of regional strategic planning and conducting activities.

The three main priorities led to the establishment of task forces which include a Teacher Assistant Training Task Force, an Information Dissemination Task Force, and a Collaboration Task Force, which correspond respectively to the priorities listed above. The task forces work between meetings to plan and conduct activities to meet the prioritized needs. The accomplishments of each task force are described in the paragraphs that follow.

The Teacher Assistant Training Task Force established a prioritized list of low-incidence ancillary staff needed to provide services. These included teacher assistants for Blind/Visually Impaired, Deaf/Hearing Impaired, Emotionally Disturbed, and Speech/Language. Beginning with the Blind/VI low-incidence area, the task force developed a course outline, curriculum, training materials, and a resource guide. The task force established correspondence to local schools, provided registration packets, and arranged for facilities and speakers for specialized training for Teacher Assistants working with Students who are Blind or Visually Impaired. The training was a collaborative effort of the Southern Region CSPD Action Team, the Oklahoma School for the Blind, the Oklahoma State Department of Education, East Central University, and the University Affiliated Program. The initial 22-hour training was conducted in April of 1997. Since its inception, the training has been repeated four times, and an advanced level of training was planned and implemented. This specialized training for teacher assistants of Blind or VI has been in great demand and has provided training for 84 ancillary staff from across the state, who work with the Blind or Visually Impaired. The task force was pleasantly surprised to find out that one of the teacher assistants had gone on to pursue teacher certification for Blind/Visually Impaired. Oklahoma has few "home-grown" Blind/VI teachers. The second low-incidence area identified for teacher assistant training was the Deaf/HI area. Again the task force worked through the process to establish this training. The initial training for this low-incidence area was conducted in February of 1998, providing training for 22 teacher assistants of the Deaf or HI. The second training, conducted in February of 1999, provided for 20 teacher assistants. The demand for this type of training continues to be great, with more applicants than slots for each training session provided. The third low-incidence area addressed by this task force was Emotionally Disturbed. The initial pilot for this training is scheduled to be conducted in April of 1999. The collaborators for each training have remained basically the same, with Oklahoma School for the Deaf being added for the Deaf/HI training. East Central University Office for Continuing Education, the Oklahoma State Department of Education, the University Affiliated Program, and the Southern Region CSPD Action Team have been constant collaborators across all low-incidence teacher assistant training projects.

The Information Dissemination Task Force has addressed the priority of formalizing methods of cross group/cross agency information exchanges. This task force has implemented a Professional Development Newsletter, which is published quarterly and distributed to stakeholders across the Southern region. The newsletter is published between quarterly meetings of the Southern Region CSPD Action Team, highlights the agenda from each meeting, and provides a list of upcoming professional development opportunities. The newsletter is mailed to approximately 300 contacts at all agencies, IHEs, and LEAs in the Southern region. This task force hopes to establish a technology-based form of information dissemination, namely a website, through a link with the Oklahoma State Department of Education or another agency. While this is a future plan, the task force realizes that not everyone has access to technology innovations, and thus will maintain the Professional Development Newsletter.

The Collaboration Task Force addresses the both the second and third priorities established by the Southern region. This includes formalizing the methods of cross group/cross agency information exchanges and inviting, welcoming, and enthusiastically including higher education while offering resources to support IHE initiatives and efforts. This task force has identified timely issues to address in regional workshops. Through collaboration with East Central University Office for Continuing Education, the Oklahoma State Department of Education, and other agencies (i.e. Cooperative Council of Oklahoma Schools Association) an annual regional workshop is provided at no cost. Timely issues such as collaboration, co-teaching, special education law, and discipline issues have been addressed. Dr. Marilyn Friend, a nationally recognized speaker on collaboration, was featured in February of 1998 at a Southern region conference, entitled Creating Inclusive Schools: Moving from Concepts to Reality. This opportunity provided training for 100 participants. Continuing with this effort, the task force planned and conducted a second regional conference, in February of 1999, entitled The Law, IDEA, and You! This conference focused on special education law and discipline issues and provided training for 140 participants. This task force plans to continue the effort to address the priorities of collaboration/formalizing methods or cross group/cross and cross agency information exchanges and offering resources to support IHE initiatives and efforts in continuing education.

POTENTIAL FOR REPLICATION IN VASTLY DIFFERENT RURAL AREAS and PRACTICAL APPLICATIONS

Oklahoma's CSPD initiative focuses on the rural aspects of the state and its geographical diversity, which includes four major metropolitan areas and rural areas where the population is sparse. Due to this geographic diversity, the initiative compensates through the concept of regionalization. Regionalization allows for a grassroots approach to determine preservice and inservice training activities unique to the needs of specific regions. Using environmental scanning, identifying, and prioritizing needs, the regions have taken a proactive approach to CSPD and the Strategic Plan. Each region can tailor activities to reflect their rural characteristics, while supporting the unified vision and CSPD Strategic Plan. The Southern Region CSPD Action Team perspective exemplifies the rural focus. The region geographically comprises the southern half of Oklahoma, is the largest region in the state, and has only one metropolitan area. Through strategies aimed at overcoming this barrier, the Southern region has conducted activities to support the unified vision and CSPD Strategic Plan, which have impacted both regional and statewide training and services.

The Oklahoma CSPD initiative has potential for replication in other states that are largely rural. Regionalization can be duplicated for CSPD and other initiatives. The number of regions can be determined on a state-by-state basis, according to geographic diversity. Activities developed by Regional Action Teams in Oklahoma have potential for replication. State-level CSPD funds have been funneled to the regions for activities and this type of support can also be duplicated in other states. The steadfast leadership and support of the Oklahoma State Department of Education, Special Education Section, CSPD Leadership Team has been instrumental in ensuring the success of this initiative to improve services to person with disabilities in Oklahoma. This, too, can be duplicated in other states through the development of vision and strategic planning.

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IMPLEMENTING COMMUNITY-BASED INSTRUCTION IN RURAL AREAS

As we head into the new millennium, we must be ever aware of the needs of individuals with disabilities. Dramatic changes in work site and residential placements, in conjunction with advancements in technology, require educators to reevaluate the preparation of students for their futures. During this information age, we are becoming a much larger global community and the importance of integrating individuals with special needs into the community becomes increasingly apparent and relevant.

In this past century we have heard various theorists note that one learns by doing and the individual learns best when he/she is able to interact with the environment. Community Based Instruction (CBI) addresses both of these constructs and provides opportunities for social integration as well. Research has shown that the natural learning environments presented CBI provides opportunities for individuals with special needs to acquire, develop, and generalize skills. Natural settings also allow for the development of social skills, friendships, and appropriate behaviors with non-disabled individuals. The concept of creating circles of supports for youth and adults provides avenues through which natural supports in other areas such as community living and recreation can then be more easily accessed thereby enhancing the quality of life for an individual with or without disabilities. When goals are addressed in the natural environment, the learning process is more concrete for the learner.

According to Bandura's Social Learning Theory (1977), one must consider that the individual lives and observes behavior in the environment. This observational learning is viewed as vicarious learning. Therefore, modeling of desired behaviors becomes a possible method or channel for teaching. Since learning occurs through modeling and interacting with the environment, other individuals in the environment and the environment itself can serve as possible reinforcers. By allowing individuals to learn from their own experiences, self-regulation is developed and an individual gains skills in self-judgment and reaction. In a similar manner, CBI creates opportunities for the learner to interact with natural environments, respond to natural cues, react to reinforcers, and increase independence.

CBI as a teaching methodology has theoretical and pragmatic implications for rural special educators. These implications include barriers and strategies for implementing community-based instruction in rural areas. Barriers include transportation, limited community resources, funding, and community acceptance. Strategies for overcoming barriers involve functional assessments, ecological assessments, task analysis, community-referenced simulated activities, and adaptations.

The criterion of ultimate functioning (Brown, Nietupski, Hamre-Nietupski, 1976) is one of the major theoretical underpinnings of CBI. Curriculum decisions for students with disabilities should address their future performance in residential, vocational, social, and recreational pursuits. "Will the student need this when they're 21?" is a question teachers can apply when determining the functionality of tasks (Beck, Broers, Hogue, Shipstead, & Knowlton, 1994). To this extent, CBI represents a functional curriculum because students will interact in local homes, businesses, stores, theaters, churches, and parks.

Since students will ultimately participate in their communities, teachers can and should initiate training for life and work skills during the school day. However, CBI requires overcoming a variety of barriers. A common barrier is transportation. Teachers must overcome potential barriers related to access to transportation. Teachers deciding to implement CBI may have to persuade school personnel that training activities in natural environments improve acquisition and transfer of skills and knowledge. Goals and objectives on an Individualized Education Program (IEP) related to CBI can mandate transportation to community sites. Developing good rapport with the director of transportation and bus drivers may facilitate access to transportation. Another strategy is to form ride-share programs with community public service agencies. Case managers, parents, and volunteer co-workers are potential transportation providers. Travel time and distance between the school and community sites can also be overcome through these strategies.

Many rural areas lack a variety of resources. Exposure to various training environments may be limited by the nature of the communities themselves. However, assessment can address the match between community resources and individual needs. If typical community members travel one hour to purchase groceries in a larger city, then the CBI can mirror that routine. Conducting interviews or surveys with parents and community members can reveal the usual patterns and customs in a particular rural setting. Another assessment procedure useful for discovering potential community resources is to ask students to choose the goals of CBI (Test & Spooner, 1996). A related strategy is to visit community sites frequented by typical same-age non-disabled peers (Falvey, 1986).

Funding is also a barrier to successful CBI. Fiscal support is necessary for several reasons. Real money is essential for using public transportation, making purchases, and attending recreational activities such as movies, arcades, and sporting events. Limited funding can be overcome through various strategies. Recruiting contributors from student or civic organizations as sponsors is one method. Establishing partnerships with businesses is another strategy. Businesses can provide money for CBI activities and in return students with disabilities can provide services to the business. Fund raisers that involve students, parents, and community members is another approach for raising money. An excellent technique is to find community members who want purchases made for them. In this way, students can use that person's money and shopping list to practice conducting transactions in stores (Falvey, 1986). Directing funds earmarked for school supplies can be redirected to finance functional training in independent living skills such as cooking. Another tactic to generate a source of money for training purposes is to start a student-run business.

The final and often times most probalistic issue related to CBI is that of community acceptance. Fortunately for rural educators, the issue of acceptance does not appear to be so difficult as it does for those who teach in urban areas. Teachers and school administrators should approach the promotion of CBI programs from the viewpoint of positive advocacy. By approaching businesses and local recreation and leisure facilities in a positive non-threatening manner, one can easily acquire the support necessary for implementation of training and programming in those environments. Making strong initial inquiries is important, but teachers should always continue to maintain frequent contacts to ensure successful long-term partnerships. Once a few businesses become involved, they may act as references. It is easy to have current businesses speak with the owners of potential new businesses to learn how the CBI program is working and befitting their agency.

Another factor involved in establishing strong CBI programs is reciprocity. This means creating "win-win" situations for both the business and the school program. When locating work placements for students, the school can offer the prospective work site inservices on such topics as: working and communicating with individuals with disabilities, implications and consideration of the American's With Disabilities Act, and school services for children and families with special needs. Schools can also offer the use of classrooms as meeting facilities or the use of a school gymnasium for after work intramural games or aerobic classes for employees of the business.

There are various strategies that educators can employ to develop CBI programs. Community-referenced instruction refers to instruction that takes place at school but references the community. For example, filling out actual bank deposit slips in mathematics class uses community materials in the classroom. Although simulated activities are not the real thing, they can, to a certain extent, approach the desired skills in necessary in the community. Educators that use classroom settings to simulate community environments should not consider simulations as a replacement for the community, but rather as a means to add or augment instructional programs (Nietupski, Hamre-Nietupski, Clancy, & Veerhusen, 1986). Partial participation is another teaching strategy applicable to CBI (Baumgart et al., 1982). Educators can target skills where the student can perform part of a task, if not all of it. For example, a student with limited knowledge of money skills can learn to hand dollars to the cashier during the purchase of items. Many instructional practices for students with severe disabilities such as graduated guidance, task analysis, and appropriate adaptations and modifications are also applicable to CBI.

In conclusion, rural special educators can use CBI to create meaningful instructional contexts that include students with disabilities in their communities. These instructional contexts can initiate relationships with community members, non-disabled peers, and potential job sites. As the millennium approaches, special educators can utilize CBI to develop innovative approaches to meet the learning needs all students in their communities.

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DEVELOPING A HYPERBOOK TO TEACH COMPUTER MEDIATED LEARNING

Distance courses have been and still are especially appealing to that growing student body component - the off campus nontraditional student who may work full time and live some distance from campus. Computer mediated learning (CML) courses can overcome the temporal and spatial obstacles of isolated commuter students and busy schedules. Advances in computer hardware, software, and Internet access have provided educators with a plethora of computerized resources to augment their regular classes or create courses that are totally computerized. There are numerous studies that show no significant differences between a variety of distance learning/teaching techniques and traditional classroom instruction see, http://tenb.mta.ca/phenom/. Unfortunately, distance learning is typically more expensive to develop and to conduct than is traditional classroom learning. Efficacy must come from an increase in learning (either qualitatively, quantitatively, or both) when new forms of technology are adopted. The current focus in distance education generally is either on video or computer delivery. Computerized instruction can be done individually, in large groups, or in collaborative groups.

CML and Collaborative/Constructive Learning: Computer mediated learning (CML) increases efficiency only if the framework of learning changes. Given a collaborative group, the group knowledge is always superior to the individuals and therefore the collaborative product should be of higher quality. In a number of ways the group is more powerful than the individual.

Collaborative Learning in the Hyperbook: Collaborative learning is used in this hyperbook because it is a way to allow participants to have some control over their learning. At the higher levels of learning it is inappropriate to ask anyone to learn all of the things that a group learns in the same way that they group learns it. Learners must have some control over their learning. In collaborative learning the learners have some control over what they will learn. Participants are already beyond the novice stage and some will be experts. These will share their expertise with others in the group to increase the learning of all.

Developing Community: It is possible to develop educational communities that identify their goal as collective sense making through the collaborative experience. The activities in the learning community have a significant impact on the development of its members, Jennings and Dirkson (1997). The practices in the learning environment change and are changed by the social action system in which the learners are embedded. The social practice in which the learner participates influences the individual's psychological development. Students should be given an opportunity to experience collaborative process as part of their learning experience.
http://home.okstate.edu/homepages.nsf/toc/CMLHOME

Multigenerational Cohorts: Students can post their collaborative products to a course website where others can see them and use them as examples. These products will remain available electronically so that future cohorts of learners can use them and build upon them. This is the multigenerational learning site. Through the development of the multigenerational learning site and the use of its examples we can raise the level of understanding, the level of sophistication as those who come later go beyond those in earlier cohorts. Student products can be available for others to use as long as the hyperbook is on the web. The multigenerational site will illustrate students best efforts and will be available so that new learners can build upon what was developed before, as described by James (1997) at http://www.soc.hawaii.edu/ ~leonj/leonj/leonpsy/gc/generations.html. Students are invited to return as mentors and to continue to modify and post new products to the site as their Internet teaching practice continues to develop.

Multigenerational Hypertext: Here we describe the process of developing a multigenerational hypertext as a series of modules combined to make a series of courses in the instructional design of CML focusing on education on the Internet. Students using the hyperbook learn to create materials applicable in all content areas using either traditional instructional design or constructivist instructional design (or both). Students also learn how to create and present web-based materials for presentation to students at all levels. Each module is presented in four formats so participants will have the opportunity to try different presentation approaches. Development of all twelve formats for presentation will be discussed. Instructors will be more likely to try teaching approaches with which they have experience. All instruction is designed to be platform free as participants from different universities will have different equipment and different programs will be supported by different institutions. Participants have the option of gaining graduate credit by selecting modules, which are appropriate for their development. Credit or CEU producing learning is product based. Participants work individually or collaboratively on all products. Collaboration may be local or at a distance. The idea behind product based learning is twofold. It allows sharing of products so others can see what is good and what really works. Secondly, it provides components for the educational portfolio, which can be used as evidence of learning and growth, and more importantly for raises, promotion, tenure, and faculty development.

What is a Hyperbook? A hyperbook is a text that resides on the Internet. It contains all of the components of a regular book and it has internal and external hyperlinks that can be used to move around in the text or to move to other local or remote locations using the Internet. Some hyperbooks allow users to annotate them or to add examples/material to the text. Participants can develop products and some of those products will be used as examples to illustrate good procedures in the hypertext. The hyperbook is a performance oriented hypertext which tells the participant the options which are available and the actions that are necessary to execute them.

Basic Ideas in Using Hypertext: Hypertext material is text which has embedded links to allow the reader to take many tracks through the material based on interest, previous experience or by external direction. Here the text is not linear. All learners cannot be assumed to be the same and therefore they will come with different discourse histories and different needs. Each learner will use text differently and this particular text differently too. Some will need a guidance system and others would not accept one if it were offered. Teachers should plan to provide prerequisite knowledge for some learner's thorough just-in-time learning. Note that learning here is individualized not cooperative. This implies that some form of preassessment may be needed to know when to offer assistance in learning for a learner at a particular point in the text. Teachers may need to control where students have been to insure that requirements are met. This means that the student's track through the text must be captured in some way if there are passages to which the learner must be exposed. Students will follow through the content and either agree or disagree with it, understand or not understand or sometime misconstrue the material. When this is evidenced the teacher should point it out. If this happens frequently a FAQ notice about the possible misunderstanding should be posted. In monitoring hypertext teachers should look for use patterns, which can be suggested to later students. They should look at the applicability of the links used and determine the interests of the students. All of these things will impact the directions which students take and teachers can make suggestions or text modifications based upon them. See tool at http://www.eastgate.com/ and examples at http://gut.it.emerson.edu/Courses/DigiCulture/Bogen/DC.site/Digital%20Culture%20Files/HText.htm.

Implicit Hypertext Design: Hypertext is multilevel and nonlinear. Ideas branch and lead to multiple places. The mode is compilation rather than linear constructive in nature. It cannot be recreated on paper. Large link sets require navigation in conceptual space and cannot be represented graphically. Hypertext supports intuitive association, which is heuristic, stochastic, and beyond. It stimulates integration and contextualization in ways not possible in linear thinking. In a sense hypertext transforms the reader into author as the link choices dictate the sequence and the content, which are experienced. Some argue that it fragments and decontextualizes the text but the track taken represents the individuals thinking process at a given point in time. All texts, which are linked, are co-resident, all exist at once. Linked documents cooperate; therefore no single document can exist in isolation. Hypertext parallels the way a person learns by exploration and association in a dynamic, interactive and nonsequential process. Hypertext is similar to the web but on the web site designer's control the links. Users on the web cannot add links but this is possible in hypertext. http://cs.art.rmit.edu.au/projects/media/hypertext/publications/assessment/hypertext_teaching.html .

Practical Hypertext Design: Interconnections in hypertext can provide the learner with access to definitions, breadth and depth material, video, audio, graphics, text, and other materials which have been made available by the text designer. The metaphor is one of where do you want to go rather than what do you hope to find. This leads to the creation of semantic webs, which are trails through the network, which promote effective learning. See examples at http://www.hcc.hawaii.edu/guide/www.guide.html , http://www.isg.sfu.ca/~duchier/misc/hypertext_review/ .

Why would we want to develop a hyperbook? More nontraditional students are entering or reentering college as downsizing displaces trained personnel, early retirement incentives allow people to start new careers while they are still vital and useful citizens, technology changes force skilled professionals to retrain, and new careers that did not even exist 5 to 10 years ago are now in great demand. At the same time, technology has placed into the hands of teachers and students powerful educational tools via computers and remote access to a fantastic array of resources via the Internet. Higher education faculty should address the needs of the ever-growing population of nontraditional learners as well as new traditional students to utilize these electronic tools and resources. These electronic tools and resources allow higher education to expand their campuses from serving students at a traditional central location to serving students around the world via distance learning courses. http://www.cis.ohio-state.edu/hypertext/faq/usenet-faqs/html/hypertext-faq/faq-doc-11.html

Access and Hyperbooks: Hyperbooks can be used to teach in ways which go beyond what is possible in traditional classrooms, particularly for non-traditional students who have difficulty in meeting during traditional class times. Hyperbooks can be accessed 7 X 24, that is seven days a week, twenty-four hours per day. When this feature is paired with learning approaches that are asynchronous, learners can participate in learning activities on a 7 X 24 schedule. This facilitates learning for nontraditional, distant and other learners who cannot meet at regular class times.

What is this hyperbook all about? Generally this hyperbook is designed to help teachers at the college level develop courses of instruction which are designed to be provided on or supported by the Internet. Specifically, the book is designed to facilitate the following goals: Provide support for moving the instructional base to a many-to-many form of instruction rather than using the computer to provide one-to-many instruction. Create a virtual infrastructure where participants in multiple cohorts can learn, work, and develop in the business of teaching or develop learning on the Internet. Provide teachers with contexts and experiences required putting them in the center of their own growth, so they can experience for themselves what is required of students. Create a multigenerational superdocument related to teaching on the Internet, which will live and grow across time increasing the learning and exemplifying products, which can be used to improve teaching and learning on the Internet. Assist in the development of personally relevant technologically based materials appropriate for teaching in the participants' disciplines. In the hyperbook we assume that most could do all that we ask by themselves given enough time. The assumption is made that all are teachers and that all could learn to do CML. Based on this assumption what we are trying to do is to stimulate the development process and to scaffold some behavior which would take longer if individuals had to develop it all by themselves. See http://home.okstate.edu/homepages.nsf/toc/isdhome .

Modular Approach: Each module is product based and participants have a choice of the kinds of products that they develop. These products are sharable and are posted to a multigenerational generational webpage attached to the module to which the product is related. Hence participants in later cohorts will be able to see and to build upon the efforts of previous learners. This insures that learning grows and the participants will have the benefit of the labor of the earlier participants. Because each module has several possible products, it is expected that learners will produce a wide range of example products in a wide variety of content areas. As generations pass modules will become larger as student work is added.

Description of Learning Formats: Modules would be developed in a variety of presentation formats so that participants would experience a variety of presentation approaches. It is unlikely that faculty will develop materials of a kind which they have not previously used. Therefore, modules should be available in at least some of the following presentation formats:

- Downloadable bookmarks to provide sequence among Internet sites (Site evaluation and uses summarized
- and integrated into teaching product development--collaborative activity)
- Hypertext with email response and student annotation—interactive activity
- Listserv distribution/communication to collaborative and cross disciplinary groups—collaborative activity
- Internet website development and distribution, individualized learning based on accessing resources listed
- on a website—individualized activity
- Streaming audio lecture and slide presentation (cooperative activity)
- Asynchronous threaded discussion (collaborative activity across disciplinary groups)
- Electronic bulletin board—Interactive activity (asynchronous)
- Listserv and email—interactive activity
- Synchronous discussion (collaborative activity within a single discipline content area)
- Synchronous discussion (collaborative activity across multiple discipline content areas)
- Asynchronous collaborative discussion (collaborative activity within disciplinary group)
- Course café discussion for affective/social learning (collaborative activity)

These formats for the modules provide multiple opportunities for participants to participate in active,cooperative, and collaborative activities as well as individualized activities as they learn.

Online Practice: The following is abstracted from what is presented to participants,"We view this and subsequent CML courses as a way to build a body of knowledge about practices in online learning. We are all pioneers in this area even though we have collectively taught for many years. As pioneers we can contribute to the development of good teaching practices for our peers and for those who come after us. The intergenerational document which we will create will form a legacy for those who follow us. You do not have to provide your work for others outside of your peer group in the course but we hope that you will share with all teachers in Oklahoma the products of your labors which will make others better CML teachers in the future." See http://home.okstate.edu/homepages.nsf/toc/isdhome

Modules for the Development of Teaching on the Internet: Teachers cannot model what they have not experienced. Therefore we will provide contexts and experiences necessary to put teachers in the center of their own growth, so they can experience for themselves what is desired of students. Participants have a choice of modules in which to participate. The tasks involved hopefully will be authentic and meaningful to them. Each module will provide a choice of products, which students can choose among to develop. Products will have a real audience--this means that they should be shared with others who are teaching or learning to teach in CML settings and/or students. To do this we develop a multigenerational website where products can be posted so that others can build upon them.

Experiences in Active Learning: We all learn better when we are active in the learning process. This hyperbook provides only the beginnings of what is needed to be a good teacher in a CML environment. This is done on purpose. Each participant will have to be an active learner and find the activities needed in the discipline to make CML a good experience for learners. Active learning means more than just doing something under the direction of the teacher or program, it means thinking about what is being done in a metacognitive sense. This means reflecting on the thinking process and determining what is actually happening in the learning. We will try to assist all by providing the opportunity for active learning. Students will have to think about what they are doing and integrate it into what is already known. This by the way may be different for each learner.

Multigenerational Posting Requirements: The materials which participants create will be shared with others. The rationale here is that it is easier to create materials when there are examples to look at. We have tried to provide a few examples but there will be participants from many fields involved in the modules and we could not hope to create examples which all could use as models. Therefore we will use participants creations to help those who come after them. This is the concept of the multigenerational document or database. Each cohort will develop materials that will fit the needs of their particular courses. These examples will be linked to the appropriate places in the hyperbook so that others can visit them when they need to see examples. In some cases it will be obvious where materials will be used as examples. In others we will decide how the examples will be applied. We will try to notify each author as to where his or her materials will be used in the hyperbook. Some may be able to use these examples as part of their portfolio of education related materials. To insure that the examples are not eh]phemeral, we will mirror the sites of the best ones so that they are not lost. In some cases participants will post their own materials so that others can comment on them as part of the learning process. In other cases projects will be sent to a member of the staff for evaluation. In either case we may link the material to the hyperbook.

General Philosophy of the Hyperbook: The following directions are given to students, "this hyperbook is designed to allow you to explore areas of your interest which will help you to do what you want in Internet (CML) teaching/'learning. We want to show what you create to other learners so that later users will not have to recreate the wheel. Therefore we will ask you to develop the products you are interested in and we will use these products as examples for others later on. Most of what we will ask you to do will relate to product construction or to dialogue in discussions which can be captured and used later as source material.

Small Assignments that Build: Most of the assignments or product activities are designed to be limited in scope. This is intentional on our part. You need to get relatively rapid feedback and to know that your materials will work for what you want them to do. This evaluation will usually come from peers, and occasionally from us. If we were to ask you to develop large products this kind of developmental feedback would not be possible. We hope that you will take this into account when you develop materials for your own students. When this approach is taken it is important that the products developed fit together so that in the long run you come away from the learning setting with materials which are sufficiently complete so as to be usable with others. Therefore we ask you to take responsibility for your learning. Plan what you do so that you can integrate the materials you are developing into a coherent package that you can use to develop and support a CML course. We will ask you to share your small products with others. When you have completed a course we will ask you to share it with all of us so that others can see how you integrate the components for the type of teaching which you plan to do. This will also provide an opportunity for you to receive peer feedback if you want it. If you post a completed course with us you may place a feedback form or a series of forms in the material and solicit feedback from members of future generations or cohorts of students using the hyperbook." See http://home.okstate.edu/homepages.nsf/toc/cml4.1.

Working with Others: Ask for volunteers to be web pals. Anyone who has completed more than "X" modules can be a web pal. Become a trainer and a mentor for other faculty. When they sign up for a module they must complete it within "X" amount of time. Have an " I want to start Module "X" form at the beginning of any module that requires groups to do the activities. This insures that there will be a cohort if they request to start and must wait until several others have signed up to do group work.

Overview and Directions: John Dewey (1916) lamented, "Why is it, in spite of the fact that teaching by pouring in, learning by passive absorption, are universally condemned, that they are still so entrenched in practice." But systems change slowly. You have a great deal of expertise in the development and conduct of instruction. We will not presume to try to tell you everything that you must know to teach in your content area from a pedagogical view. We will ask you to create many examples of content from your discipline, which illustrate how you would apply the principles that we have brought together in this hyperbook. We will ask you to share these examples with others so that they can learn from you. We will ask you to reflect on the examples of others and make suggestions that may make them better. When you view other's work you may have different perspectives, which are common in your discipline, which may be new to some of your colleagues in other disciplines. Sharing these insights will increase all of our instructional knowledge. We do not claim to know all that is needed, but we will try to share our instructional design expertise and some of the ways to use technology which you can use with your content expertise to improve learning for students.

Scaffolding Your Development: In the hyperbook we assume that most could do all that we ask by them given enough time. The assumption is made that all are teachers and that all could learn to do CML. Based on this assumption what we are trying to do is to stimulate the development process and to scaffold some behavior which would take longer if individuals had to develop it all by themselves. Collaboration allows members of the group, all who are experts in various areas to share their expertise and to scaffold each other and facilitate the development of teaching materials and techniques.

Peer Collaboration Processes: Much of what you will learn in CML will be from your peers at your own and other institutions. Peer collaboration is necessary when learning is interest based and text information is not encyclopedic. We would hope that you would share your expertise with your peers and that your peers would share with you. This implies that you should read the question bulletin board frequently and answer the questions of others when you can. Remember that what may be easy to you may be difficult to others and vice versa. When others send you email about their products try to help them. You will learn a lot trying to teach what you know. When others send you email about your products, post the comments that make the product better so that others can share. If you are not comfortable posting the email make the changes and then tell others what you have done. Generally be collaborative and share with others. There is no official or organized competition between us as peers. The more that you help others the more you will learn and the more people you can learn from when the course has ended.

Evaluation of work: One of the keys to releasing students to take control of their own learning is to teach them how to evaluate what they are producing. You already know how to evaluate teaching materials so we would not presume to try to teach this to you. However when you work with students you may want to follow the following procedure: Ask the students how they would like to have their materials evaluated. Generally they will not be able to create a long list of criteria which might be used to do the evaluation. Brainstorming criteria will provide them with a list of alternative criteria from which they can choose. Then they should be allowed to pick criteria for product evaluation. When this has been done several times, for different products, you can start asking them to use one or two criteria which you want used as well as the criteria which they negotiate for. This can be done in the form of a contract. Students should always be able to negotiate for alternative evaluation criteria if they want to. This gives them some control and responsibility for the product. If the evaluation is totally external the student has no real agency in determining the product components and therefore little responsibility for the outcome.

Peer Evaluation: A more difficult form of evaluation is peer evaluation. We all do this when we share articles we have written with colleagues, for review prior to submission for publication. Students are unlikely to have had this opportunity and will have to be taught how to evaluate others appropriately. In a CML environment evaluations in print are taken more strongly than those given verbally or those hand written on a paper. Therefore students should be taught to be gentle when they present critical comments. A constructive comment should tell the student what is wrong, why it is wrong, and how it should be fixed. Examples of the fix should be provided to assist the student. Constructive comments should be made in private, in CML by email, and not posted to a bulletin board or other permanent record. Some times we will ask you to comment and to send your comments to us as well as to the author so that we can evaluate your comments, however this kind of comment too will be private and sent by email. When you receive comments from us or from your peers you may post them if you think that they improve your product or you can implement the changes without opposing the peer comment. This is up to you. Your final evaluation will be to have your work on display for peers. This is the form of evaluation that we provide for you. If you feel that you need for peer evaluation prior to permanently posting your work with your name on it, call on your peers for assistance.

Hyperbook layout: New learners will, we hope, enter the book from its' homepage. The homepage provides a description of the book, a linok to a module TOC, a link to a searchable detailed TOC, a link to a variety of possible one credit course configurations, a site map link, a link to student comments about the interesting module configurations by previous students, a link to student created examples and questions, and a link to a FAQ page. There is a link to enrollment processes and contact information.

Printing Version and its URL with Hot Link: Each module or set of modules (making up a larger course) will have a printing version that can be copied without the illustrations. If your computer is older or your Internet Service Provider (ISP) provides slow services you may want to work from the printing edition and open the links you are interested in using your Internet browser.

Navigation in the Hyperbook

- **Description of the Index:** Indices are usually fixed. They are created after the text has been written and are arranged in some logical order. We are in the process of creating an index for this text. The plan is to develop the index and then revise it twice a year. This means that the newest material which students may create and sent in to be added to the book may not be represented, immediately, in the index. We will however link new material to the table of contents in its module so that you can see what is available if you link to the right module.

- **Table of Contents for Each Module:** Each module will have a table of contents (TOC). This will be on the first page when you link to a module following the title and the brief description. The TOC will contain all of the bold and underlined titles in outline format and each heading will be internally linked from the TOC to the heading so that you can immediately access any segment without scrolling through the text if you so desire.

- **Navigation Internal links-module:** In each module pages link to the table of contents, the preceding page, and the next page. These links are on the navigation bar. Underlined words are hot linked to the book glossary (the back button on the browser is used to return from the glossary to the module. Blue URLs are linked through the browser directly to the pages they represent at either local or remote locations. There are also links between sub-modules (major components of the module).

- **Links module-to-module:** Navigation between modules is done through the end navigation bar (next module), through the table of contents, through the modules listed in the introductory module to the hyperbook, or through the module headings in the syllabus. The modules may also be accessed through the homepages table of contents at http://home.okstate.edu/homepages.nsf/toc/CMLHOME. And through http://home.okstate.edu/homepages.nsf/toc/isdhome.

- **Pictures in Text:** The following directions are given to the students,"the first pages of many sites have been captured and inserted in the text of the hyperbook. These are presented to pique your interest and to draw you into exploring these and similar sites. It is unlikely that you will want to go to all of them but you should visit all that you are interested in. After you have visited the various sites you will have more to share with others in collaborative settings as your develop collaborative products. The hyperbook is a performance-oriented hypertext that tells you the options that are available and the actions that are necessary to execute them."

Things we have Learned in Asynchronous Hyperbook Development:

- Do not leave notes on the website on things that have to be done, e.g., **make this link hot.** This really confuses some students.
- Have all applications up and running before the class starts. We had a bad experience with a listserv that did not work and half the class dropped.
- Make all the directions really clear, field test them with potential students.
- Never believe that CIS will/can do what they say they will do. If the application is not up and running do not say that it will be.
- If you use a listserv for communication, have it up several weeks in advance of the course so you can talk to students and introduce them as they enroll.
- What ever you want students to do, even if it is really easy, do not believe that students will think that it is easy. Some will barely be able to turn a computer on.
- Do not start by expecting as much work as you would in a regular class, when students see what they have to do, plus learning how to use a new system, they will think it is too much. Or, expect a higher than normal dropout rate.

- It helps if you tell students in detail what you are trying to do. See what we used at http://home.okstate.edu/homepages.nsf/toc/isdhome. This was not enough event though the syllabus was thirteen pages in length.
- When using a modular approach and providing choice, strongly suggest that they read all of the modules. This increases understanding and fosters collaboration. They will also know what their options are.
- Teach them how to subscribe to an ISP.
- Have a How Do I telephone help desk several hours per day.
- Plan more time at the beginning and end of the semester. Some time will be needed during registration if you use online registration.
- Send each enrolled student a postcard. Have them put their email address on the card and return it. This insures that all are on the listserv or email message list.
- Say something about Deborah Tannen and the male fear of asking questions and directions. Be sure that they feel it is Ok to ask for help, in a private way. Have them call if there are questions.
- Have an Internet question bulletin board where all can post questions of general interest or to ask about technical problems. In the introductory module have each new learner respond to each new posting to get they used to talking and posting to the correct places.
- Recommend that those who are sophisticated in web design already should not use frames in instructional materials because so many cannot use them with the browsers which they use, or require a specific level of a specific browser.
- Have a bulletin board or part of a bulletin board for each module entitles "Neat Related Ideas". Post materials/ideas that are not generally posted and archived.
- Do an outline of tasks needed complete the course. Mark the modules needed to do it as an alternative track. Do some kind of mastery checklist based on the objectives. Tell students to choose what they want to learn how to do. Have a validation spreadsheet to make sure that the required postings and messages with products have been sent.
- Have a class sign up sheet or schedule for modules that need a collaborative group. When five have signed up, form the group and have them start.

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PROCESSES FOR DEVELOPING SCAFFOLDING IN A COMPUTER MEDIATED LEARNING ENVIRONMENT

An Overview of Scaffolding: Vygotsky (1936) has provided an explanation of how learning can be facilitated with his explication of the" zone of proximal development". See http://www.uqac.uquebec.ca/dse/3psy206/auteurs/vygotsk.html. This idea in teaching developed into scaffolding. His concept is similar to that of Feuerstein (1979) in his development of "instrumental enrichment". See http://www.business1.com/IRI_Sky/onfie.htm. The zone of proximal development which a learner has for a particular piece of information is that time in the learner's life when he/she is ready to learn a particular piece of information but does not have all of the prerequisites or other information that is needed to acquire the information without assistance. Vygotsky asserts that the teacher or facilitator can provide this information by helping the learner build a structure into which to put the new information. This building process is called scaffolding. What the facilitator does is to probe the student and find out what is not known and then through hints or provision of structures, e.g., advance organizers, shows the learner how the new information can be related to the old. As learning is a socially constructed process, the learner and the teacher literally think together. This is a way for the learner to do what he/she cannot do alone. The teacher provides coaching and also provides feedback when the learner tries to use the new information in authentic ways. Scaffolding in this sense is temporary and task oriented support, which is provided to allow a learner to extend his/her reach in the social development of knowledge. This is why many constructivists talk of learning as apprenticeship. The learner takes in the new information and the structure that is provided, transforms it, and constructs his/her own knowledge, which, if the structure is appropriate, will be similar to that of the teacher/facilitator. Scaffolding allows the learner to model and to observe the model for discrepancies. See http://spider.cit.act.edu.au/metale/03news/mhe0345.htm.

Scaffolding Defined: Scaffolding in CML is an interactive process by which a learner is assisted by others (teachers or peers) to acquire knowledge or skill which cannot be acquired without assistance at that point in time and skill. It is like having training wheels on a bicycle. Scaffolding can be provided by teachers, peers, or computers, e.g., help screens. See CML tutors at http://www.umanitoba.ca/faculties/medicine/units/biochem/tutorials/Introduction.html or http://dbhs.wvusd.k12.ca.us/ChemTeamIndex.html. Understanding is determined by the previous experiences of the learner, past knowledge and the ways in which previous information has been stored (memory structures determine how new information will be assimilated or accommodated). Learners seldom come to a learning setting with the same background knowledge and discourse history. Without adjustment common learning is not possible. Differences can be scaffolded in CML hypertext. Even if learners have the same background knowledge they are likely, because of other factors such as, interest, intelligence, etc., to move through the material at different rates of speed. CML tracking can accommodate this. Tracking can be seen as a form of pedagogical scaffolding. Through the collaborative process of scaffolding the true intersubjectivity of learning is developed where all parties share understanding of the task and work together to co-construct meaning and understanding. For a discussion of tracking see http://www.scholastic.com/instructor/classroom/organizing/hot.htm.

Teaching in the Zone of Proximal Development: Learning capability ranges from things that the student can do without assistance to thing that are only possible with much assistance. This defines the zone of proximal development. When a learner cannot demonstrate a desired performance the teacher will usually model the process and then allow the student to try an approximation. In this way after several iterations the student can perform the task. Now the learning process enters a new phase where the student is questioned and asks questions about the process trying to integrate it into what is already known. Eventually the learner progresses from guidance by another to self-reliance and self-guidance. Advance organizers are proposed as the link between what is known and the new knowledge, skill or process. The teaching process therefore becomes on of providing an advance organizer, modeling the appropriate behavior, exploring the use of the new skills and finally being generative with the new information, e.g., being able to teach others.

Scaffolding in the Zone of Proximal Development: To be able to learn from particular information, a learner must have sufficient background knowledge to be able, with help, to start to process the new information into personal knowledge (see http://edweb.sdsu.edu/people/bdodge/scaffolding.html). For example it would be almost impossible to teach algebra to a student who could not do basic arithmetic operations, e.g., addition. For those" in the zone", teachers and collaborative partners, in the business of learning, help those who are not at the desired level through a process called scaffolding. Ultimately we believe that all learners should think for themselves. Until they are capable of doing this we must provide support, or scaffolding, which will allow them to think about or solve problems in the topic in question with our assistance. Scaffolding can be provided at a variety of levels, depending on how close the learner is to being able to function independently. If the learner knows only a little, the scaffolder may need to model the complete act including describing personal thinking as the process unfolds. At a somewhat higher level of learner understanding, the scaffolder can have the learner model the process with assistance. Here the learner tries to perform and receives prompts or hints from the coach as the process unfolds. At a third level the scaffolder only has to identify the components which the learner should work with to start the process which the learner can then accomplish with little external assistance. At the final level the scaffolder only has to name the technique which should be use for the task to be accomplished. This last step is analogous to problem finding, or conditional knowledge, in the sense that the learner knows how to apply the knowledge but is unsure of when to use it or its appropriateness to a particular problem. Later we will call this update interactivity because it is conditional upon what has been learned before.

Ways Scaffolding Facilitates Learning: Scaffolding facilitates learning in the following ways: It helps learners make connections between what they already know and the new information, which is being presented. In this way new concepts are developed from and attached to earlier knowledge. It helps in developing mental schema, into which new information is transformed, as it becomes personal knowledge. That is, it helps in the organization of new information in ways that are meaningful to the learner. This assists in the development of evolving knowledge bases containing restructured information. Scaffolding reduces learning ambiguity. This facilitates the development of personal knowledge which is meaningful and which can be used by the learner. The transformation process allows the learner to internalize the information. Eventually the learner is in control of the task and the scaffolding is no longer needed.

Develop Scaffolding: When scaffolding is necessary, the teacher should try to minimize the cognitive load by setting the environmental conditions so that the student can both recall and use information that he/she already knows to perform most of the task (tie the new material to the old). Therefore the student has only to learn a limited amount of new information to be successful. The teacher starts by having the student identify the goal structure in the beginning of the problem phase. When the problem is correctly identified, the teacher helps the learner recall the appropriate information, which has already been learned. The teacher should try to approximate the appropriate step size that will keep the cognitive load low for the student and adjust the step size so that the student is learning easily. Some techniques that will facilitate this are modeling the performance, thinking out loud while you model the task, and pairing an advanced learner with a novice. Providing prompts, links, guides, and structures so that the learner can readily identify what is to be learned and how it relates to what is already known are also facilitated. This can be done in some disciplines by providing worked examples that the students can follow. Prompts and guides should be faded as soon as the student can perform without them. If the concepts or tasks are complex or the learner exhibits difficulty in learning them, the teacher should use successive approximation (a behavioral technique where you reinforce any movement which moves the learner closer to the desired behavior). Finally, the teacher should provide immediate feedback on errors. Scaffolding is an interactive process which requires that the scaffolder understand where the learner is having problems and then is able to provide what is needed to help the learner function semindependently through the process. This requires that the both the learner and the scaffolder participate in a community of discourse in the sense of Vygotsky (1978). The teacher must think together with the learner. This is a reciprocal process and both learn through it.

Kinds of Scaffolding: There are many kinds of scaffolding, as many as there are techniques of teaching. Some of these include offering explanations when learners do not understand new information, resolving questions which come up during a learning process, inviting participation from those who seem to be on the periphery who may not be interacting with the new information, sharing ideas to stimulate thinking about topics related to the information to be learned (may also be used to help the learner recall prerequisite information needed to use the new information), to verify and clarify understanding. Other techniques include the use of extensive examples and contributed ideas to the process which help learners see what the concepts and processes are which are important to this particular process. Scaffolders model the desired behavior so that learners can see complete performances, scaffolders also model question and comment generation so that the learner learns how to dialogue in the interactive process. The model may do think alouds where he/she describes the thinking process, which is occurring at the same time that the model performance is taking place. This is done to make the thinking process visible to the learner. The scaffolder may share information, which the learner does not have or does not access readily which is needed for transformation, if the learning process is to be completed. The scaffolder may also provide evidence either to support the process that the learner is developing or to refute statements, which are incorrect.

Tutoring as Scaffolding: Tutors provide temporary support for students which allow them to perform at a level which is just beyond their present level of competence or development. To learn the student must think about the learning and plan and monitor what is happening in the learning process. The tutor should not do this because this is what the learner must do to be able to progress. A CML tutor usually functions at a level above the most basic where the tutor models the desired performance. A CML tutor (help screen, job aid, etc.) allows the learner to begin the process and then to ask questions or to prompt the student when the process fails to proceed or upon learner request. Performance support systems try to do what training in the classroom usually does change performance on the job. This type of a system is quite different from those proposed in traditional instructional design.

Performance Systems as Scaffolding: Performance systems assume learner competence, if the learner is provided step-by-step directions in the accomplishment of a process. See statistics example at http://trochim.human.cornell.edu/selstat/ssstart.htm. There are a variety of tools used as performance systems, which can be used to scaffold behavior. These include a variety of automated tools such as spreadsheets, templates, loan calculators, and computer programs like Quicken. Performance systems can provide granular training by providing cues (as with cue cards for study) and through the provision of explanations. Searchable references and databases with search algorithms can scaffold as performance systems. Coaching and advice can also serve a scaffolding function which encourages both knowledge and skill integration.

Online Scaffolding Practices: The following is drawn from Winn (1997). Online strategies designed to scaffold students in the learning process include: Scaffolding embedded in the information which is presented to the student such as visual cuing. Scaffolding provided on separate pages which consist of directions on what to notice or what process to employ. Scaffolding in the form of tutorials which are interactive or downloadable. Online help systems in the form help pages, additional explanatory links or communication forms to contact the instructor or peers. This may be done through email, chat room of bulletin board. Virtual communities such as chat rooms, discussion data bases, virtual cafes, and the like can also provide online scaffolding. The teacher should also support varied ways for the student to organize new knowledge. This can include advanced organizers, outlines, cognitive maps, and flow charts. These kinds of scaffolds can also be used when students transfer knowledge across contexts. This kind of transfer is almost always teacher driven and even advanced students may not have an understanding of how information learned in one area can be used in another area. Therefore, the teacher should point this out and should show how the content of the new area relates to the content of the old one.

Reciprocal Teaching as Cognitive Scaffolding: Reciprocal teaching was designed as a form of cognitive scaffolding. In reciprocal teaching the teacher initially takes the most active role and models the behavior which the students are to attempt. Because the most important behaviors, what is happening in the head, are not observable they are operationalized and expressed in observable terms. This may be done through a think aloud process where the teacher describe the thinking which is going on as the observable behaviors are being performed. Gradually the learners try to perform the observable behaviors. When they can perform the external behaviors they are asked to go through the internal or thinking behaviors several times and describe them to the teacher. When the internal behaviors are clearly articulated the learners can then teach others the same process. This starts by having the learners teach the teacher , then each other, and finally those who do not yet possess the skill.

Importance of Scaffolding in CML: In computer mediated learning scaffolding is more important than it is in traditional education because learning is typically collaborative. In this many-to-many learning, all participants will provide scaffolding to other participants at different times during the learning process. Because of this participants must be exposed to the idea of scaffolding and know when it is appropriate in the dialogic process. Those who need scaffolding may or may not know that it is needed. If they know it is needed, that is they cannot do what ever it is that they are supposed to do with out assistance, then they should ask for scaffolding. Most learners are hesitant to phrase a message like this until they are sure that they are in a psychologically safe environment so the teacher may be the first resource used for scaffolding until learners see that they can use anyone who has expertise to provide needed help. When a learner does not know he/she needs scaffolding it is up to the others in the collaborative to suggest that assistance is needed, and to provide it. This usually happens when during dialogue it becomes clear that one or more players has failed to understand a point or that everyone does not have the same information base which is needed to work on the problem. When a colleague does not understand he/she should be told that scaffolding may be beneficial and be asked if it should be supplied.

The Teacher's Role in Scaffolding

Teacher Processes in Scaffolding: Teachers may want to draw attention to inconsistencies in information presented by others if the inconsistencies may lead to misunderstandings later. Minor inconsistencies should not be addressed to reduce the sensitivity of participants to criticism. Scaffolding is usually provided privately if it is not requested. This is done through the use of email rather than posting the information to a bulletin board or for broadcast on a listserv. When providing scaffolding the scaffolder will enter into a dialogue of providing cues as to what to do. This can relate to processes, strategies, problem solving or merely the sharing of information. In some cases it may only be necessary to direct focus toward the important aspects/features of the process for the learner to be able to take over and complete the process. Whatever is needed the scaffolder should provide only enough support so that the learner is just able to do it on his/her own. Scaffolders can provide motivational support and highlight the production of good comments. Teachers and others can point out differences of opinion, which need to be resolved and privately point out dispositional roadblocks, such as not listening to the comments of others.

Adaptive Materials as Scaffolding: Material can be used out of level for learners who are either more or less advanced when the material is at an appropriate scholastic level of difficulty and at an appropriate psychological level in terms of learner interest. Regular materials can be adapted or used in an adaptive fashion to provide appropriate education for a particular learner. As with any adapted material, teachers should insure that the material is educationally appropriate and is also appropriate for their students' given age, gender, and psychological capacities.

Scaffolding Adaptations Using Web Material: There are a variety of adaptations, which can be found or developed using material found on the Internet. See http://www.anachem.umu.se/eks/pointers.htm. Adaptations include out of level use where no change is made to the material before it is used. Another version of this technique is to find material on the same content by another author with a different approach or writing style and substitute it for the regular classroom material. Substitute material may also present the same topic using a different stylistic or instruction approach, which may be conceptually or motivationally different for the learner. It is possible to find material on the same content, which is written, at a different level of reading difficulty, which may be more appropriate for a particular student. Material available at a lower reading level is usually marked for usage at a lower grade. However, some in-grade material may be used if a readability program (Provided in Microsoft Office, Windows 95 and higher) is run on the content to determine that the reading level of that material is appropriate. Some contents can be accessed in smaller step size so that the material is easier to comprehend for less advanced learners. Step size is a function of presentation density, conceptual density, and sheer quantity of information used in any given presentation. It may also be equated to the speed at which a learning game needs to be responded to or the complexity of the instructions in a CML task. The material can be an adaptation when it is less complex than that typically used. Complexity refers to the information density and organizational structure of the content. The same knowledge can be approach differently through the provision of alternative problem sets, explanations, examples, and the like, all of, which may be available on the Internet.

Adaptive Presentations of Content: The adaptive presentation of content implies that different learners will be presented with different materials which will be adapted to meet their learning needs. Consider the novice and the expert, both of whom need to be taught the same information. Should both receive the same educational diet? Probably not. Novices typically need more information than experts to make sense out of new information. Their background knowledge is lower and details must be filled in that the expert will already have in place. Some technological systems will allow different learners to be programmed in different ways. Qualified users may receive more in depth material or material that is interesting but not directly related to the objectives to be learned. Some programs will allow adaptive ordering of the visible links on a page which allows hints as to which links to explore next. Some programs will conceal those links, which the student is not ready for based on exposure or pretest performance. Annotations can be provided to indicate which links have been visited and which should be visited. Help systems can be provided which will provide help at a variety of levels depending on the educational sophistication of the learner on the particular topic. Some systems can develop content-on-the-fly. The content is created separately for each learner based on a learner profile. The learner's profile would typically include learning experiences, learning preferences, knowledge sets, learning styles, and background information. This information would be fed into a neural network, which would swim the content stream and develop the adapted content for the individual. The learner provides feedback to the system as the learning progresses so the system can revise its sequences based on experiential feedback. Usually the learner is asked how useful the information is and how understandable. Given this kind of feedback the content for the next frames can be revised. For bridging betrween expert and novice see http://www.mentors.net/LibraryFiles/Expert.Novice.html.

Find Alternative Experience as Scaffolding: There are many things, which we may want CML students to experience in the many disciplines. In some cases there will be alternative experiences available on the Internet which students could access if they knew that they were available. The CML instructor who wants to provide choices should search these out or provide inducements to students to perform the searches. In some disciplines there may be multiple simulations, tutorials, virtual realities, tours, exhibits, etc which could provide similar experiences from different points of view for students with different preferences.

Cognitive maps: Cognitive maps consist of nodes or ovals with text in them and lines with relationships (see http://cotf.edu/ETE/concept.html) (see example at http://www.ioe.ac.uk/tescwwr/CAL.html) or write them on 3 X 5 cards if the map is being created manually. Sort the concepts into group. Ones which are understood, ones not understood, and those not relevant to the task at hand.Group the related terms. Arrange the cards so that those which are the most related are closest together. Leave room to draw lines. Draw lines between those which are related. On the line write the relationship between the two terms. Take the cards which had concepts which were previously deemed unrelated or unknown and see if any of them can be understood and added to the diagram. If they do add their lines and relationships. This drawing is the completed concept map. Maps can be very complex but they provide a organization which is hard to develop in any other way.

Concept Maps: Concept maps are diagrams which are designed to provide a visual language expression of the relationships between ideas and concepts. Concept maps have been used in education, philosophy, policy studies, etc., to show relationships between forms of arguments. In management they are used to represent the conceptual structure which underlie decision-making. Similar formal visual representation systems are used in many disciplines, e.g., semantic networks, bond graphs, CMP, PERT, Petri nets and the like. In CML concept maps can be used for the indexing and retrieval of hypermedia materials where the nodes are hot and can be used as a hypermedia interface. Other similar structure, albeit more complex ones, are Cone Trees and Perspective Walls (Robertson, Card, and Mackinlay, 1993) which use visual abstraction to increase the speed of pattern detection. Three dimensional representations can also be developed using specific software, see http://www.conceptsystems.com/papers/epp1/epp1.htm. The use of these techniques engage the user's perceptual abilities more effectively and therefore increase the level and speed of understanding. There is also the possibility of having users edit concepts maps which can be shared in real-time see Smart Ideas at http://aace.virginia.edu/aace/conf/webnet/html/164/164.htm.

How the Teacher can set Environmental Conditions

Scaffolding in CML for Unprepared Students: Unprepared students need training in skills, which are considered basic for those who enter a class with them. This may mean basic English and math skills (see http://itrc.uwaterloo.ca/~engl210e/) or it may be third semester calculus, depending on the student. Many unprepared learners need assistance in developing study skills both for regular study and for study in CML. To provide these prerequisite skills the teacher may need to provide developmental education, remediation, and tutoring, or specialized instruction depending on the problems that the learners exhibit. A CML setting makes provision of these specialized instructional forms easier and more likely, if the requisite materials are already available. If the needed material is not available it is unlikely that the teacher will have sufficient time to develop it at least in the first few years that the CML course exists. There are many prepackaged materials, which can be used for individual students with prerequisite deficiencies. There are many tutorials (see http://www.nr.usu.edu/Geography-Department/rsgis/tutor.html), simulations (see http://www.fullman.com/semiconductors/, Internet drills (see http://www.lamc.utexas.edu/fr/home.html) and virtual field trips (see http://www.tsoft.com/~cmi/ or http://www.mip.berkeley.edu/) which can be accessed on the Internet to which individual students can be directed. There are writing labs online (see http://www.gallaudet.edu/~ghritter/CompLink.html#owl) as well as reference materials such as dictionaries (see http://work.ucsd.edu: 5141/cgi-bin/http_webster, thesauruses (see http://www.encyclopedia.com/ or http://explorer.scrtec.org/ , spelling and grammar checkers which will help students develop writing competency. There are statistics see http://trochim.human.cornell.edu/kb/kbhome.htm,statistical expert systems (see http://trochim.human.cornell.edu/selstat/ssstart.htm) and a host of mathematical practice, and teaching tutorials (see http://www.quasar.ualberta.ca/) to which students can be directed. The same is true in many science areas. Scaffolding for the unprepared student is limited only by the amount of time the teacher wants to invest, in most cases.

Student Created Materials: More experienced students can create material which are designed to help less learning sophisticated students. Student-created material can be posted to their own or the class Web page, which provides an authentic audience for the older student and provides level-appropriate materials for educationally younger learners (James, 1997). See http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/gc/intro.html. Students could contribute to this teaching and learning archive, which could be accessed by other students.

Visuals, Illustrations and Simulations: Resources on the Internet can be used to help students see information in ways that are not available in the traditional classroom. A search of the Internet will provide many illustrations of things, such as, art objects, tools, experiments, etc., which students might need to see to facilitate their learning and their motivation to learn. These illustrations can be linked in an explanatory way to existing classroom content, and may be simplified for easier visual understanding. Pictures of realia (real things/objects), in a variety of settings can be accessed and shown, sometimes with motion. There are a variety of simulations, which are available, which may help special learners. The Virtual Frog Dissection (see http://george.lbl.gov/ITG.hm.pg.docs/dissect/info.html) shows a full dissection conduced on screen. There are simulations in simplified breeding experiments. e.g., the Virtual Fly Lab (see http://cdl-flylab.sonoma.edu/) which may be useful in agricultural areas. There are simulations on classical Pavlovian conditioning to illustrate how people learn see http://www.users.csbsju.edu/~tcreed/wcb/pavdemo.html . There are many educational animations for students that teach them about economies, towns, human groups and the like. Learners can experiment with and control of inputs of these animations to see different outcomes. There are a variety of morphed simulations in which, for example, a person ages on the screen or changes in some other way. Simulations are useful to illustrate processes, which take place over long periods of time. For many learners, these kinds of processes need to be illustrated iconically before they are presented symbolically (in text) if they are to be understood. Finally, text can be presented in a variety of ways, which are not available in a traditional print-only environment. The teacher, for example, can highlight electronic material which has been downloaded or scanned to point out key terms, major concepts, answers to questions at the end of the chapter, specific important content, etc. Some of these techniques have been done in earlier, non-electronic settings with highlighters of different colors, for learning disabled students. However, when this is done electronically different lessons and projects can be used with the same text without expending books.

Stages of Learning with Facilitation: Those who study learning, from a constructivist view, describe four stages of facilitated learning (or teaching). First, there must be orientation where the learner is exposed to the new information and the new information is related to the learner's prior knowledge. See this through the development of the Visible Human Project at http://www.nlm.nih.gov/research/visible/visible_human.html. Then, if the learner is unable to assimilate and accommodate the new information, there is a period of coaching or apprenticeship where the facilitator and the learner think conjointly, and the facilitator provides scaffolding as is necessary for the learner to absorb the new information and transform it. Then there is tuning, where the learner refines the information and insures that he/she knows it in a way that allows it to be usable in authentic situations. Finally, there is a period of practice with supervision being faded in a behavioristic sense, which leads to autonomy of behavior. The behavior is routinized. The learner knows how and when to use the information and can do it effectively without external prompting.

Coaching in Collaborative CML: Coaching in CML is a process of providing hints, cues, and feedback. See directions for coaching at http://www.topten.org/content/tt.BL17.htm. Peers or teachers can accomplish it. The coach observes the learner and provides scaffolding when it is needed. Not too much coaching should be given. If a coach is providing most of the activity the learner may not be at the appropriate development level in terms of this particular content. The coach can use coaching to provide, or remind about the use of a strategy or technique, as well as the direct teaching of the technique. When coaching is done the learner should retain control of the activity as it is assumed that the student will maintain responsibility for the learning. This can be clearly seen in CML tutorials, http://vearthquake.calstatela.edu/edesktop/VirtApps/VirtualEarthQuake/VQuakeIntro.html.

Scaffolding in Groups: Teachers can provide scaffolding, but after collaborative groups have been working together for a while there will be little need for external scaffolding. Groups should not seek out the teacher for scaffolding unless they cannot scaffold each other. This is the measure of a well functioning group. Groups should only ask for scaffolding when their own internal resources have been exhausted. If teachers do to much scaffolding much of the value of the collaborative experience designed to help them work together solving authentic problems, will be lost. For issues related to setting up group discussions, which can be used to provide scaffolding, see http://builder.cnet.com/Servers/Threads/index.html.

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USING INTERGENERATIONAL COMMUNITIES TO DEVELOP A SPECIAL EDUCATION DISCIPLINE PAGE WEBSITE: FOCUS ON THE GIFTED

The basic idea for intergenerational communities comes from James (1997) who presents the concept (see http://home.okstate.edu/homepages.nsf/toc/cml48.1) that learners from one class can create materials with which learners from later classes can learn (see http://www.soc.hawaii .edu/~leonj/leonj/leonpsy/ cognitive.html). In other words, a class can create a database, teaching materials, and learning examples that others can mine. If information for a class is collected and maintained in an electronic archive, each successive class or generation can use that material and build upon it. Hence, after several generations, learners should be able to go farther into the material and learn more than they would be able to if they had to start from scratch. See service learning at http://www.newhorizons.org/trm_servlrn.html .

Benefits of Intergenerational Learning: Students learn a variety of skills as the multigenerational database is constructed. They learn scientific and scholarly skills such as writing for the public, analyzing the work of others, expressing an intellectual position, and developing model instructional activities. They develop information literacy in the discipline and become familiar with technology as a medium of instruction. They develop leadership and citizenship skills as they volunteer for projects (all activity should be voluntary and interest based). They expand on the knowledge base and introduce innovations in teaching and learning, and they maintain an intellectual presence in the community. See http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/gc/intro.html) lists the ways students learn to reflect on practices of previous generations.

Making Disciplinary Knowledge, Practice, and Culture Visible in Generational Curricula: With the acquisition of the language or vocabulary needed to talk about information in a discipline, ideas are linked together creating a web of relationships which fosters understanding (see for example http://www.soc.hawaii.edu/~leonj/leonj/leonpsych/instructor /kcc/kcc97.html). For each new learner, integrating the existing information with new information compares alternatives. See use of original source documents at http://www.inform.umd.edu/EdRes/Colleges/HONR/HONR218C/ . Learners critique ideas with guidance and support from others and eventually develop their own ideas independently. Learners reflect on their progress and on the new structures, which they have created. See http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/sthomes.html. For a G/T curriculum newsletter see http://www.wm.edu/education/systems.htm .

Developing Intergenerational Communities: Students use materials developed by earlier generations to foster their own learning. This process leads to the development of multigenerational communities. There are a variety of forces that are at play here that develop when learners learn intergenerationally (see examples at http://www.ls.sesp.nwu.edu/lc/sitetoc.html or http://www.radcliffe.edu/forstudents/intergen.html.

Generational Strategies: Generationally, we have learners who form teams within their generation to develop service modules which later generations will use. The team focuses on writing for each other (within generation) and for others across generations rather than for the instructor. See units at http://www.geocities.com/Athens/Olympus/7123/integrate.html, http://www.stf.sk.ca/ps/src/srconlin.htm , http://www.libsci.sc.edu/miller/Unitlink.htm , http://www.pacificnet.net/~mandel/ , http://members.aol.com/MGoudie/ChildrensLit.html , http://members.tripod.com/jaydambrosio/ .This provides an authentic audience. Learners organize past work in new formats, feature it in their work, and use it as the basis for further expansions of ideas. They will develop coaching strategies for their peers and, after they are validated, leave these electronic coaches for others in following generations to use as scaffolding when needed. Other possible activities include indexing and annotating prior reports, creating and developing new associations between prior knowledge, and creating cognitive maps, which integrate old and new materials. See student created web pages at http://lphs.montreal.qc.ca/Web-Classes/Kidz2 / Kidz2.html .

Assignments in Generational Curricula: James (1997) http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/gc/intro.html describes a process for making assignments in generational curricula. Learners write weekly assignments from the assignments; reports about the material they are learning are created. The learner reports are published on learner generational web sites, which are linked to the multigenerational database. Assignments are generationally cumulative and draw upon the work of earlier generations. Learners are told to write only what they believe in and understand; therefore, there are few problems with data, which are incorrect. Learners develop collaborative projects, but each learner creates an individual report, which is posted to the database. The reports developed are for the next generation of learners not for the instructor (authentic audience). Both individual and team reports in the archive can be added to at any time to maintain currency and to improve their content. Learners make suggestions for future learners as to further explorations or ways in which the accumulating data can be examined (see for example http://www.uvm.edu /~jphclass/bot160/). Successive generations of learners maintain the archive. They read the material, use it, and link pieces of it to their reports to form a super document. For teacher management strategies see http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/gc/onlinetalk.html. See information about Renzulli models at http://www.gifted.uconn.edu/gubbins.html,

Interactivity Strategies: Interactivity strategies revolve around the process of interaction necessary to create collaborative documents within and across generations. Individuals create journals of what they do and experience, add this information to the database, and share it with others. Interview data with subjects or authors are useful in certain disciplines. Notes that are shared with collaborators or are archived, provide source documents for future developers. Cognitive maps, which show structural relationships, are used to show structure and interrelationships between ideas and pieces of information. See http://teams.lacoe.edu/, http://www.psu.edu/celt/grants/FELT10.html

Super Documents (Living Document Systems): Super documents are compilations of smaller documents, put together to store information and use it within the document in a variety of ways (see http://www.psyc.nott.ac.uk/aigr/papers/Living-Documents/paper.html). Components of the document are adaptive in the sense that they are used, integrated, cited and linked to other internal documents to serve new needs and to show the present status of information. The contextual set of information is expected to grow over time. See http://prism.prs.k12.nj.us/WWW/OII/disc-pub/fiesta/0006.html as a discussion archive.) Hyperlinking allows multiple orderings based on use and the needs of the users. Material is easily added and altered for different purposes without changing the initial structure of the source documents. This allows multiple perspectives on the original documents and multiple representations of the integrated information, which should represent a variety of perspectives. Information use can be extended as source documents form the basis for further information development and adaptation. Because of the linking feature non-experts can easily follow various tracks as they travel the information field. (See a hyperbook on education at http://www.ils.nwu.edu/~e_for_e/index.html) This requires a persistent medium in which the knowledge is stored so that subsequent generations will have access to the historical data. See http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/cyber.html. Just as in databases, help and search systems can be used to facilitate access to information in the super document. For multimedia digital document archive directions see http://ksi.cpsc.ucalgary.ca:80/articles/ CMMC94/. We have a socially developed visible community product: the super document, which all use and contribute to. James shows how to maintain a multigenerational document at http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/gc/intro.html

Tasks to support a living document system: There needs to be a mechanism whereby direct communication is provided between users who all have access. In multigenerational communities this is accomplished by providing a way for learners to post new information for the next generation, providing an authentic audience for the information producers. http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/instructor/leonweb1.html. There needs to be a mechanism for the retrieval of information and documents, usually a full text and title search analysis procedure. There should be an internal authoring system, which allows authoring by users and by agents. Agents are programs, which summarize or abstract information according to predeveloped algorithms. Procedures need to be in place so that users can annotate documents. This is usually done by hyperlinking to internal addresses in the documents. Users should have the ability to develop links and to insert addresses into existing documents. Many super documents have the facility of creating artificial agents for on-the-fly document creating. See service learning at http://www.nicsl.coled.umn.edu/ .

Developing A Disciplinary Website for Gifted Education

A great place to start is to see http://www.eskimo.com/~user/kids.html which contends that it lists all G/T resources available on the Internet. Each area will have its own structure, which should influence the components of the discipline page. In many disciplines, strategies for learning in that discipline are a neglected area. Usually learners are only gradually inducted into the fold, mostly at the doctoral level. Thus many students, who could be majors, drift away and are not attracted into the discipline when they could have been, if they were exposed early on to what the discipline is and how its members function. Conversely, a number of learners may be drawn into a discipline only to find out very late in their educational careers they do not care for or are not comfortable with the discipline as a profession. In a CML setting we recommend that teachers provide a discipline based Web site, which interested students, can explore and use to learn about the discipline. See http://www.enmu.edu/~piercer/physci/#geol

Benefits of Discipline Webpages

- **Improves Learning:** Learning is improved by having access to material at a variety of levels. Interests can easily be followed when there is an abundance of disciplinary content. Learning through exploration and discovery is fostered by having access to materials when they are needed. See http://home.okstate.edu/homepages.nsf/toc/isdhome for an example.
- **Improves Motivation:** The disciplinary website allows exploration which comes with curiosity. Student who can follow their own interests and who have choice are likely to be more motivated than those whose learning is prescribed by more traditional curricula. See http://home.okstate.edu/homepages.nsf/toc/isdhome .
- **Develops resources:** The discipline page should be a living and growing resource which collects new information, articles, examples, and student products as each cohort class moves through. Resources will continue to develop as long as students and faculty continue to use the site and to post new marterial to it. Some classes should be assigned to manage the discipline page as part of their learning. See http://www.soc.hawaii.edu/ ~leonj/leonj/leonpsy/gc/generations.html .
- **Encourages Mentor Partnerships.** Mentors should be provided for courses in a variety of applied disciplines where networking and practical guidance are beneficial to the practice of the craft, e.g., education, engineering, architecture, veterinary medicine, etc. The online mentoring process is

described at http://www.english.upenn.edu/~afilreis/Writing/awm.html. Alumni groups can be used to provide mentoring relationships for learners in a variety of disciplines (see http://www.alumni.berkeley.edu/student_services/mentorship/mentee.html).

- **Provides Authentic Outlet for Student Projects:** The disciplinary website is one of the most appropriate places for information to be displayed by students and faculty.

Goals of Learning in a Discipline

Different groups will have different goals for learning in a discipline. The goals on the departmental or disciplinary website should be represented and explained to both students and faculty. For a disciplinary goal explanation see http://education.okstate.edu/coe/sahep/schoolpsych/science_based.html. Note that some organizations will have their goals on their own Web pages and a disciplinary website may link to these rather than having to replicate them. In educational psychology we have goals set by accrediting agencies. e.g., North Central and NCATE, we have goals set by state agencies, e.g., the State Department of Education, see http://sde.state.ok.us/lib/pass/passindx.html and we have goals set by professional organizations; e.g., the American Psychological Association see ethics for APA at http://www.apa.org/ ethics/code.html. For NCATE standards see http://www.ncate.org/projects/npt/ elemdraft/elemstds.PDF .

Studying in the Discipline: Students should be provided help in learning the discipline. This begins with study skills and goes through the creation of a group portfolio (see http://www.lsa.umich.edu: 80/ecb/infohighway/roster.html). The teacher can assist by providing assistance in team creation, scaffolding, and helping team members scaffold each other. See papers from a G/T conference at http://www.nexus.edu.au/teachstud/gat/gat.htm .

Three Levels of Disciplinary Web Page: The same page will not do for all levels of learners or for all members of the community. There should be a page, which focuses on the beginner or participant in the first course in the discipline. This track through the page should show the broad scope of the discipline. It should show a range of activities in which practitioners could join and the kinds of jobs that they could hold. It should provide access to a glossary of terms and a number of reference sources in the library, which would be useful to the beginner in developing ideas and papers using the discipline content. If a generational archive is available it may be tapped for teaching introductory material. There should be links to higher level material and to other interesting material. An intermediate level page could be designed for undergraduate or masters level students. The depth of material provided is higher than that provided for the beginner. This track should provide access to a great deal of material (see http://www.leeds.ac.uk/educol/), which explicates or summarizes what, is happening in the field. It should provide access to conferences (see http://crystal.biol.csufresno.edu:8080/etl/index.html ,lectures, campus and regional meetings, and links to national organizations (see http://educom.edu/). It should provide access to style manuals (see http://www.cas.usf.edu/english/walker/apa.html) and databases, which are necessary to writing papers (see how to conduct a literature review at http://anarch.ie.toronto.edu/courses/mie240/literature.html) and to constructing projects, which are appropriate to majors. There should be a chat room and a FAQ link which advanced users explore. There should be a help desk or a question bulletin board where interesting questions can be posted which other students or faculty will answer A third level of a disciplinary Web site is the advanced (graduate) level site. This site would focus on the interaction of advanced students who have research questions and technical questions, which cannot typically be easily answered by looking up the answers. This can include chat rooms at a national level, Web conferences, and the like. (See http://www.acs.ucalgary.ca/~browder /db_tutorial.html). For a parent site see http://gtworld.org/ . Also see http://www.eskimo.com/~user/ kids.html .

Mining Intergenerational hypertext: James (1997) starts by discussing the mining of hypertext as an approach. See http://www.suu.edu/WebPages/MuseumGaller/artapp.html As students work with a piece of text they can annotate it with hyperlinks. Consider for example a classic reference work. If this is available in an electronic format students can annotate it with explanations, definitions, worked examples, all linked within the document. Students could write critiques of sections of the document or particular ideas. Students in the same class could read each others' work and annotate it. All of these documents could be linked together to create a super document. Subsequent classes could write more in depth pieces integrating the work of earlier students. The older documents could be archived, and the new documents could be used as the primary links.

Learner Processes

There are a number of processes which learners should develop when working with a fully functioning discipline site. These include:

Link Materials: One of the possible processes in a CML hypertext which spans generations is that students can use materials created by earlier generations where they create their own products. Students may link to materials within the hyperbook to provide definitions, examples, simulations, processes, and so forth. See http://www.soc.hawaii.edu/~leonj/leonj/leonpsych/instructor /kcc/kcc97.html.

Integrate Existing Information: The ability to link to material created earlier improves the ability to integrate existing information. Learners can paste pieces together and use links to provide other information. Linking provides an opportunity to show relationships which is unavailable in traditional books. The discipline webpage should contain many materials in the same place which can be used in the integration process. For a list of articles see http://www.millville.cache.k12.ut.us/millville/teachers/ tag/articles.htm . For ERIC resources see http://www.cec.sped.org/er-menu.htm . For a best practices manual for G/T see http://www.sde.state.id.us:2500/GiftedTalented/Manuals/Tue__02_Jun_1998 19_38_47_GMT/?Template=ShowOne .

Critique Ideas: To critique ideas one must have several perspectives to work from. The disciplinary website in disciplines which have shared theory, rather than a paradigm, will provide different philosophical, evaluational, perspectival tools which can be used in analysis and critique. Disciplines usually teach critique methodology appropriate for their content. This should be available on the website.

Reflect on Learner progress: The discipline website should teach reflective processes. There should be activities which will promote reflection on the content at a variety of levels. Peer interaction is helpful here. If several have had the same experience they can all provide what they think the critical points are and discuss the discrepancies. This will point out to the students who are not reflecting well or analyzing well what others look for that leads to success

Examples of Student Products: Students at many levels need an authentic audience for their products. The discipline website can be one place where products can be displayed. Students can create teaching materials, summaries of articles, summaries of the work of theorists, examples of processes, solved problems, tutorials, simulations, etc. The list is endless. Any of these student products, after review (and possible revision) can be posted as useful additions to the disciplinary webpage. See products at http://sun.sjen.org/cluster4/webquests/033/WQ033.html .

Teaching Materials: In many disciplines faculty ask students to create materials specifically designed to teach concepts in areas where students typically have problems. See http://etc.sccoe.k12.ca.us/i98/ii98Units/Cross/WINNERS/Text/Wnrhme.htm .

Developing Article Archives: To facilitate learning students may want to provide articles which have been published in journals or other sources which illustrate key points or seminal thinking. There are however issues of copyright which must be dealt with. Those who worry about copyright, given educational fair use statutes, should have the class members sign a contract that they will not give materials to others from the archive or use then, except for personal learning. See http://forum.swarthmore.edu/~steve/ . The password on the archive should be changed every semester to avoid copyright violations. See article archives at http://freeway.net/~mmuniak/archive/submit.htm ,or http://www.techweek.com/Article Archive.html .

Designing the Discipline Page

The discipline webpage should contain the information that students need, at a beginning level, to understand what the discipline is all about. When creating a disciplinary webpage it may be useful to brainstorm, with colleagues and students as to what should be included. Some possible items are provided below. The disciplinary Web page should provide information about those who are considered to be the big names in the field. This might include brief biographies, lists of publications, links to Web sites, etc. See http://www.smc.qld.edu.au/edulinks.htm, http://www.signpost.mwci.net/sample/education.html, or http://www.signpost.mwci.net/sample/education.html Descriptions of what the current and historical progenitors of the field have done provides useful summaries which can be used at the intermediate and sometimes the beginning level to inform learners about who did what and who influenced the work of whom in the historical chain of events see http://cncn.com/homepages/ken_m/shakespeare.html . Students as class or individual projects can do much of the text development here.

Big Theories. The big theories in a discipline are usually related to one or more big names, but this is not always so. Learners at the beginning and intermediate levels need to be able to access summaries of the big theories with which they will be studying and working. Diversity in opinions and theories promotes student growth and student recruitment. Researchers and theorists in gifted education become known, such as Maker http://www.ldonline.org/ld_indepth/gt_ld/eric_digest427.html, Betts, Delisle http://www.educ.kent.edu/CoE/EFSS/SENG/index.html, Renzulli, Reis, http://www.ucc.uconn.edu/ ~wwwgt/nrcgt.html, Silverman, http://www.gifteddevelopment.com/, Amabile, torrance, Gardner, Sternberg, etc. For an ERIC list see http://www.cec.sped.org/faq/gtmodels.htm With faculty supervision other students can create the text describing the big theories in language that is more on the level of the beginning and intermediate student than text created by faculty. See http://www.soc.hawaii.edu/~leonj/ leonj/leonpsy/cognitive.html.

Big Questions. In many disciplines there are a number of big questions which everyone is trying to address. The Web site for the discipline should detail these questions for the intermediate and advanced learner see http://megasun.bch.umontreal.ca/protists/protists.html The primary purpose here is to keep the big questions in the mind's eye so that they will be the focus of the new thinkers in the field who may come up with unique approaches to solutions for these problems. Identification (http://www.aacps.org/AACPS/BOE/INSTR/CURR/tag/GTid.htm, http://www.jayi.com/sbi/aagc/Clark_Zimm.html), multiple intelligences (http://www.ed.gov/databases/ERIC_Digests/ed410226.html), philosophies of teaching (http://www.ed.gov/databases/ERIC_Digests/ed262525.html), best practices (http://www.edweek.org/context/hotlist/gifted.htm , http://www.jayi.com/sbi/aagc/Rogers.html), etc.

FAQ's: In some disciplines, there are a set of commonly asked questions which novices ask which should be included on the discipline page. FAQ's could concern research, alternative theories, questions asked in beginning or intermediate courses, etc. As students ask questions electronically you can post the questions and the answers to the FAQ page and then refer other students to the page instead of having to repeatedly answer the same question. New students can read the FAQ's to get an idea of the problems or issues, which are being discussed in the discipline 7in the department. See http://pages.prodigy.com/ PAUM88A/ For information about talent searches see http://www.eskimo.com/~user/ztsearch.html .

How to Do Research: Every discipline specific site should have a section on how to do research in the discipline. See http://www.fste.ac.cowan.edu.au/scims/math/Welcome.html. This page should include the typical methodologies, analysis techniques, and links to information on how to conduct them. The department will want to have links to faculty research and to the output of student research teams. The more examples of research can be shown students, the more likely they are to become interested in it and the discipline. See an example of a focused research site at http://sunsite.unc.edu/south

Links to Discipline Related Web Pages: There are many sources on the Internet, which provide information, which will become more and more useful to learners. Databases are available in some disciplines. Proceedings and papers from conferences, books, demonstrations, simulations and the like may be available. Select links for beginners, intermediate and advanced learners as well as a master links page which all could explore. This latter page would be usable by faculty and graduates as well as students, if properly maintained. See http://phylogeny.arizona.edu/tree/eukaryotes/fungi/ascomycota/ascomycota.html http://spiders.arizona.edu/salticidae/salticidae.html http://mendel.berkeley.edu/dog.html See http://home.okstate.edu/homepages.nsf/toc/cml33-1

Resources: Resources may include books, encyclopedias, databases, newsletters, reviews, show catalogues, etc. These should be listed and the contents described. See http://australiansevereweather.simplenet.com/cyclones/history.htm http://members.aa.net/~urizen/blake3.html See federally and state funded centers for G/T education and research at http://www.cec.sped.org/faq/gt-urls.htm .

Journals: Both beginning and intermediate learners will need to know about the good journals in the field see http://www.parentsjournal.org/toc.html. Good journals are determined by polls of experts or by the citation counts of articles, which are published by the journals. Learners should know the names of the journals, the kinds of material that they publish, and the level of the content material. Learners will need to know what the library holdings are and where to look for articles either in the stacks, on the Internet or in the library's computerized database. Advanced students will need to know about publication policies and acceptance rates. See http://www.wm.edu/education/gti.htm , http://coehp.idbsu.edu/tag/JEG.htm , http://www.prufrock.com/mag_jsge.html , http://www.gifted-children.com/whatsnew.htm , and http://www.cagifted.org/xmembers.htm .

Professional Organizations: The discipline page should provide a list of professional organizations, links to their homepages, descriptions of what the groups do, and who belongs to them see http://www.apa.org/. Indicate which are appropriate to look to when applying for jobs and which have good journals. Students should be encouraged to join those which provide student membership rates and to attend regional and national conferences. Students who participate in national/regional organizations and meet others in the field are more likely to stay in the field and to be able to develop networks which will lead to jobs see http://www.mwebfamily.co.za/women/network.html. Some organizations will have student subgroups, which offer a way to meet others, who are beginning in the field. Meeting other students will help with research, idea sharing, and network development. Develop the links to your state association, the National Association for Gifted Children http://www.nagc.org/), The Association for the Gifted http://coehp.idbsu.edu/tag/default.htm, http://vcn.bc.ca/gca/links.html, and other professional organizations http://www.jayi.com/aagc/about.html.

Future Conferences: Future conferences either on the Web or in person should be listed on the Web site. In some disciplines there are only a few conferences available. In other disciplines there are many. Use the Chronicle of Higher Education Annual Conference Supplement to start the list, then supplement with the local and regional conferences, which do not get national advertising. See http://chronicle.com/ or http://www.nagc.org/Other/state.html.

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DEVELOPING A COLLABORATIVE ELECTRONIC PORTFOLIOS FOR PRESERVICE TEACHERS IN COMPUTER MEDIATED LEARNING

The portfolio provides a mechanism that can be used to represent excellence and variety in the work of one preparing to be a teacher. The use of portfolio is a logical response to the current interest in authentic assessment, situated learning, lifelong learning, or integration of theory to practice. A portfolio is not only product-based, but it provides student autonomy and professionalism as each student chooses what to present in her or his portfolio. The purpose of this discussion is to review the implementation of portfolios with preservice teachers and to describe appropriate electronic artifacts for potential inclusion to an electronic portfolio.

Background for Portfolio Development

Traditionally portfolios have been used to show the work of professionals, such as the classic example of the artist's portfolio (see http://www.art-portfolio.com/). This concept has recently been extended into the realm of education with the teaching portfolio, which has been modeled after the portfolio of the beginning architect. A reference list of educational portfolio articles in ERIC is available at http://cisi.ospi.wednet.edu/CISL/Strategies/PRTFRESEARCHED.html . The teaching portfolio, according to Barton and Collins (1993) is composed of artifacts (things produced as part of the normal work), reproductions (documents describing typical events which describe the work of the portfolio developer), productions (documents such as reflective statements which have been prepared particularly for the portfolio), and attestations (descriptions of the developer's work which are created by others, like recommendation letters). See teaching portfolios at http://www.temple.edu/ATTIC/portfolio.html or http://www.ilstu.edu/depts/CAT/prepaport.html. To create an Internet portfolio see http://www.astro.uni.torun.pl/~vario/java/help/manager/CreatePortfolio.html .

In a computer mediated learning (CML) environment the document is the primary form of artifact. Most artifacts in electronic portfolios are documents that show products that result from the learning experiences. For one example of CML artifact development see http://www.kn.pacbell.com/wired/donner/ for development of a scrapbook from a simulation. Processes that take place in learning do not necessarily yield products. These processes and events are evidenced by reproductions such as video, dialogue capture, or the interchange of ideas in a CML chat room or virtual reality learning space. A third kind of portfolio component is the attestation, a document prepared by another or by others. In a CML environment this may be testimony of others in a group as to a member's performance, reports by a teacher, or evaluation by an external mentor. Productions comprise another component of portfolios which include goal statements to describe why a particular product was created, captions to describe the document, and reflections to describe growth over the development of the product or over several products. See creating an electronic portfolio at http://206.252.190.23/port/index.html. For software to build portfolios see http://www.xemplar.co.uk/primary/Toolboxes/PBschool.html.

Artifacts Shape Mental Processes. Anything physical or tangible can be called an artifact. The objects in our environment and our knowledge of them determine the way in which we perceive our environment (see for example http://www.duq.edu/PT/RA /RA.html). If a learner has only a few learning tools these are the tools which will be used. Our understanding of the artifacts shapes the way we use and interact with them (see a description of artifacts in science at http://www.utexas.edu/depts/tnhc/.www/crayfish/astacidea/astacidea.html).

Uses of Portfolios

Portfolios Monitor Progress: Portfolios can be used to monitor progress. In traditional use, the teacher examines the student's portfolio periodically and evaluates the growth of the student. See http://206.43.189.116/library/portfolio.htm. Furthermore, in CML the portfolio is used instructionally for student evaluation of personal learning. For the individual, the portfolio shows the kinds of products and the sophistication of the teams with which the individual has been involved. At the group level, the group portfolio shows how the group has developed products, which may be of interest to other groups in parallel problem solving situations, e.g., teaching cases. In order to become effective and productive lifelong learners, students systematically reflect upon their own work. See comparative sample portfolios at http://www.uno.edu/~drcom/graphics.html.

Portfolios for Program Evaluation. Portfolios may be used for the purpose of program evaluation. There is nothing better than being able to show the development of learners through their products to a team of evaluators. Example products, which illustrate the accomplishment of programmatic goals, are effective productions in an evaluative sense. To see a list of possible components of a portfolio for an Internet course see http://mailer.fsu.edu/~slynn/4710assignments/4710portfolio.html. Selective use of portfolio examples can show that in general the program goals have been reached. See http://watson2.cs.binghamton.edu/~loland/whatis1.html.

Portfolio as Archives. Portfolios can be used to make archives for others to use after the learners depart. This multigenerational use will increase the learning of future generations of learners. See http://www.soc.hawaii.edu/~leonj/leonj/leonpsy/gc/intro.html. Care must be taken to insure that copyright is not violated see http://www.unc.edu/courses/jomc050/copyright.html.

Group Portfolios: In CML, the group preservice teacher portfolio promotes reflection and discussion leading to consensus as to what should be included. Reflection leading to consensus is important as it teaches cooperative activity and increases social skills in a new medium. The group portfolio:

- Promotes synergy as its development stimulates questions in others, provides opportunity for scaffolding when some do not know concepts, and in reflection on composition, as well as development, it promotes position defending
- Promotes peer review, especially when individuals contribute completed activities and documents. Peer review sets the standards for peer performance. Less capable/advanced members will strive to match the level of others and this provides challenge and a goal level that is seldom set in individual learning settings
- Is a teaching device for both peer and teacher instruction. The review and comment process teaches editing skills and composition/organization of idea.
- Portfolios are recommended for all forms of teaching in which students are to produce real products for authentic audiences.
- Support student choice and should not be totally controlled by teachers.
- Allow students to think about and reflect on the value of their productions and artifacts.
- Leads to more positive motivation and to more use of the content than traditional assessment.

See example portfolios at http://www.essdack.org/port/example1.html. Group portfolios are particularily appropriate for case studies, problem based learning, team teaching, and example IEP meetings.

Portfolio as Research: The group portfolio is researched based in the sense that all can look at the work of others and draw upon it. It is also metacognitive in the sense that it causes all participants to think about their thinking and their production during its creation. This is particulatily important in problem based case studies. See portfolio development for college students at http://sirius.cba.ohiou.edu/~mgt300/ESP/portfolio.htm.

Portfolios Improve Writing: Collaborative writing is improved through portfolio creation. See webfolios at http://www.gsh.org/wce/schelle1.htm. This happens through modeling, watching what others do, and feedback, when others provide suggestions, which improve what is created. Transactional writing is improves in the areas of clarity, organization, and correctness. Expressive writing becomes more elaborative and speculative. Finally learning is improves through understanding, idea formation, decision making and self-discovery. See writing in portfolios at http://www.eduplace.com/rdg/res/literacy/assess6.html.

Portfolios to Contain the Products in Collaborative Production: Collaborative processes are designed to produce products. In authentic settings products are designed to be displayed or used rather than graded. Therefore the best mechanism for the display of products is the portfolio. The portfolio provides a way of collecting products so that they can be displayed and so that improvement over time can be seen by their changes during development. For a portfolio see http://www.io.com/~tracy/portfolio/index.html . This fits in nicely with the archiving capability of CML and can be used to form the base for a multigenerational archive, which can be mined by future generations to improve the learning curve of new students. For a newsletter on portfolio development in teacher education see http://www-tep.ucsd.edu/TEP_MAIN_PAGES/portfolionews/PNHomePage.html.

Designing the Portfolio

Essential design components of portfolios are goal statements, captions, objectives, and self reflection (Mokhtari, Yellin, Bull & Montgomery, 1996). Each portfolio has a goal statement that describes why the portfolio has been assembled. Each piece of evidence should have a caption that describes the document and a rationale for why each piece is included in the portfolio. Students should develop objectives for their own portfolios. The process of self-reflection should be taught in conjunction with the development of the portfolio. Teaching becomes collaborative when portfolios are used as the learners choose what they will work on and include in their portfolios. The process of evaluation teaches that evaluation is a dynamic process. For an example of student products on the web see http://curry.edschool.virginia.edu/curry/class/edlf/589_004/sample.html.

A CML portfolio for a teacher (from Bull et al. 1994) might include teaching documents, e.g., syllabi, lesson plans, study guides, curricula, and examinations. The portfolio would include instructional materials such as case studies, laboratory manuals, course contracts, instructional aids, and concept maps. There would be academic products such as publications, abstracts, and journal article reviews. And, finally personal documents such as a curriculum vita, self-assessments, and autobiographical sketch and a statement about teaching philosophy. In addition to these artifacts there would be productions, reproductions and attestations, although these might not be represented electronically or they may be presented electronically on a CD-ROM. See http://www.ash.udel.edu/ash/teacher/portfolio.html.

The components of a portfolio are influenced by the time in a person's career (see Bull, 1994), as well as the desires of the learner. Other factors, which may influence portfolio components, include requirements for the next course or the next level of training, expectations of employers and experts in the field and licensure requirements. For a system of building portfolios see http://www.acc.ilstu.edu/spsins1.htm. For a portfolio review listing required preservice teacher components see http://www.snc.edu/~kleies/portfolio.html. For a book on professional portfolio development see http://www.skylightedu.com/TrainCo/portfo.htm See directions for focused portfolio design at http://www.umanitoba.ca/student/employment/book1/portfoli.html.

Mechanical Features of Electronic Portfolio. The CML electronic portfolio has some mechanical feature making it more advantageous than the traditional paper and pencil portfolio. The electronic portfolio can be organized to be accessible to others in a searchable form, e.g., through Lotus Notes. This facilitates its use as a source document when it is part of an archive. Other groups in the same cohort can use archives or they may be used multigenerationally by other groups at a later time. The electronic portfolio is very useful in parallel problem solving where different teams can look at the development of solutions of others who possibly have used alternative processes or strategies to solve complex problems. For a list of sites related to various kinds of portfolio development see http://www.neat-schoolhouse.org/Office/Teacher/Assessment_Information/Portfolios.html.

Developing a Portfolio on CD-ROM. Boulware and Holt (1998) present information on ways to develop a portfolio stored on a CD-ROM disk. One recommendation is to develop a script to organize their materials before the CD is created. When the script is complete, then audio and visuals are continuously added. This approach allows the intention of the teacher to focus the CD rather than the available audio and video drive the portfolio development. Permissions must be collected before visuals are used, particularly of students.

Techniques for capturing material electronically in a Teacher's Portfolio: Artifacts within components is described as both its traditional form and in it Internet form if the component is likely to be part of an electronic course. In some cases, several approaches to recording the component are provided. Portfolio components are grouped as teaching documents, instructional materials, samples of student work, academic products related to teaching and personal documents that may be included in a portfolio. URLs are provided as examples to be included in a portfolio.

Teaching Documents--Syllabi: The traditional syllabus is presented on paper and can be scanned into an electronic document or entered from a computer file. The Internet syllabus may be more complex. Internet syllabi can reside on webpages, in proprietary programs, e.g., Virtual University, on CD-ROM, which are mailed out with a course, or on a local area network. Most Internet syllabi for fully webbed courses have links to local sites and remote locations, which will need to be reactivated, if the syllabi are to be fully understood. This means that there must be activation directions or an activation program that will reconnect the links when the portfolio is captured electronically. The exception to this is when the portfolio is on a website and is accessible through a web browser. See portfolio directions with syllabi at http://www.oaa.pdx.edu/CAE/WTPI98/hakanson/gene/teach.htm .

Teaching Documents--Study Guides: The traditional paper study guide can be scanned in or entered electronically to add to the portfolio. The electronic study guide may be located on a website, CD-ROM, proprietary program or on a local area network. Electronic study guides may be complex containing text, graphics, interactive assessment, video, interactive tutorials, simulations, questions with tracking depending on the correctness of ones answer, tracking based on pretest scores or formative assessment and the like. Capturing the electronic study guide requires explanations of how they are designed to work should be included if activation in a new environment is not easily attainable. See http://syllabus.syr.edu/swk/gmgross/swk361/study.htm .

Teaching Documents--Reading Lists: Traditional reading lists can be scanned in or entered electronically. Electronic reading lists may have links to the actual documents, to libraries that hold the documents and will loan them, or to places that will make them available electronically. Some electronic reading lists will provide hyperbooks which students can read in a linear or non-linear fashion. Some hyperbooks will allow student or teacher annotation. Teachers who prefer to guide students through passages or articles in teacher specified sequences may develop tours through electronic readings. This can be done using tour software or downloadable book marks lists. When these are provided as part of the portfolio explanations should be provided if the paths are not activated. See http://home.okstate.edu/homepages.nsf/toc/isdhome.

Teaching Documents--Bibliographies: Traditional and electronic bibliographies look about the same. Both are listing of books and readings that are used or referred to in the course. Electronic bibliographies may be linked to their source documents if they reside on the Internet or a local area network. Sometimes article archives are available for national access but more likely they are password protected and available only to members of the class. Availability may be through a local area network, proprietary programs or on a website using a browser and a class password. See http://www.people.virginia.edu/~djp2n/biblios/biblio.html .

Teaching Documents--Tests: Paper and pencil tests can be scanned into the electronic portfolio or entered from a computer. Tests which are resident in an electronic form may be set up so that students can take them at any time, take them at only specific times, work on them individually, work on them collaboratively, designed as preassessment, formative assessment and as summative assessment. Electronically provided tests can be customized based on students responses to items, self scoring, record and score immediately to the grade book, include video presentations, use simulations as part of the testing, and even provide experiments which the students can run in a simulated laboratory or field environment. Most of these application will need to be explained as reconnecting them after they are captured electronically is usually too difficult unless the portfolio is resident on a website. See http://teams.lacoe.edu/documentation/classrooms/gail/teacher/assessment.html .

Teaching Documents--Lesson Plans: Traditional lesson plans can be scanned in. Electronic lesson plans are likely to take the form of scripts, audio recordings of actual plans in action, videos and the like. If multi-track presentations are available based on student choice all of the tracks should be described. In most cases it is easier to replicate the electronic lesson than it is to provide just the lesson plan if the information is presented in a single track, e.g., a PowerPoint presentation with Streaming Audio. See http://www.ecsu.ctstate.edu/personal/faculty/salihd/evaluation.html .

Teaching Documents--Classroom Management Systems: Traditional management systems described on paper could be scanned into an electronic format. In electronic courses the management systems will vary depending on whether the class is synchronous or asynchronous. In a synchronous format management will be controlled by the teacher and can be exemplified by capturing teacher intercessions in discussion, class presentations, lectures and the like. The system should be described and examples provided. In an asynchronous format the teacher is not usually present. Therefore the students are the ones who should create the management system, usually as part of a group discussion or brainstorming session. This dialogue can be captured and the rules that the students generate and post can be displayed. The major teacher responsibility is to deal with flaming and to contact students who have fallen by the wayside. These procedures too should be documented and described. See http://dana.ucc.nau.edu/~tmb9/bregant/portfolio.html .

Teaching Documents--Course Schedules: Traditional course schedules can be scanned. Electronic course schedules are somewhat more complex. They may be under teacher control, teacher and student control, or totally under student control. The teacher controlled course schedule is usually a component of the syllabus or it may be a separate page that is linked to the syllabus. In either case it can be captured and easily included in electronic form. The teacher and student controlled course schedule has components which are set up by the teacher which can be captured and recorded easily. Student components of the course schedule may take the form of annotations, requests for additional instruction or different instruction, etc. Student may also create times when they will meet to discuss projects, lectures, tests, etc. These are more difficult to capture but should be exemplified in the portfolio. Student driven schedules are prominent when the students set their own learning goals and work collaboratively to accomplish the learning. These schedules can sometimes be captured but are usually underrepresented in teachers' portfolios. See http://brillig.nebwesleyan.edu/~glarose/clases/portfolio/ .

Teaching Documents--Assignments: Most traditional assignments are assigned in a paper and pencil format and can be copied. Electronic assignments can be much more complex. They can involve travel on the Internet, use of a variety of simulated, animated, or virtual experiences, tours of sites, conduct of experiments and the like. Most of these should be describe if they are included in the portfolio. Provision of the URLs will assist evaluators if the sites are not reactivated in the portfolio format.

Teaching Documents--Handouts: Traditional handouts can be copied electronically. An equivalent handout in electronic form can range from print material to any of the activities that we have already discussed. These should be described in the portfolio if they are not activated.

Teaching Documents--Curricula: Traditional curricula are the content and objectives for the teaching presentation over a specified period of time. This is usually a paper document although it may have other aspects such as teaching materials which are not print. Electronic curricula are much the same except that any of the teaching materials can be embedded in the curriculum. If these are not activated they should be described.

Teaching Documents--Review Sheets: Review sheets are usually provided on paper prior to a test in the traditional setting. In an electronic course they may be provided in the same manner. One may also include self-checking online assessment which students can use for practice. They may be the focus of a chat room or a threaded discussion. In some cases students will meet in a virtual classroom to work on them collaboratively. Copies of this interaction should be provided as part of the portfolio.

Instructional Materials--Slides/Transparencies: In many traditional classes teacher use slides to present images of things that cannot be brought into the classroom. These can be digitized and captured in an electronic format. Slides of things, PowerPoint slides and many other image captures are available electronically.

Instructional Materials--Laboratory Manuals: These may be the same in both traditional and electronic settings, paper or electronic copy. In fully webbed courses the laboratory manual will probably relate to virtual rather than traditional experiments. In this case it may provide tutorials, simulations or virtual experiments in the manual.

Instructional Materials--Case Studies: Traditional case studies are narrative and provide all of the information to the students at the beginning of the case. There is little difference in the traditional and the electronic formats. Diagnostic cases on the other hand allow students to ask for more information, do diagnostic tests, wait to see what happens, etc., these are used more often in an electronic format. If the various tracks that have been designed are not operable they should be described so that the evaluator can understand the process fully. See http://home.okstate.edu/homepages.nsf/toc/isdhome.

Instructional Materials--Multimedia Presentations: Multimedia classroom presentations are the same whether used traditionally or in an electronic format. They can be captured electronically and shown in full motion in the portfolio display. More individualization can be built in the electronic format and if multiple tracks are provided these should be activated or described in the portfolio.

Instructional Materials--Animations: Animations are developed on computers, video, or CD-ROM for either classroom display or for use electronically on a network or the Internet. They should be recordable directly in any electronic portfolio format.

Instructional Materials--Project Requirements: Project requirements are usually presented as a paper document in traditional settings. In an electronic format they may be student developed and contracted with students. If this approach is used it should be explained and samples of the student developed requirements illustrated. In many cases it is necessary to teach students how to develop criteria for evaluation before they can develop project requirements with which they are comfortable. These teaching directions should be included.

Instructional Materials--Individualized Student Materials:
Individualized materials can take many forms in the traditional classroom. Things, readings, workbooks, modified problem and instructional set, etc can be provided. These can be scanned in, photographed, videotaped, etc. In the electronic setting there is an even greater panoply of instructional assets which can potentially be provided. Most adaptations or individualizations increase or decrease complexity, step-size, reading level, etc. In addition adaptations may include simulations, tutorials, virtual experiments, virtual field experiences, and the like.

Instructional Materials--Course contracts: Course contracts are paper products traditionally and either electronic pages or electronic forms in the electronic environment and capture easily for the electronic portfolio. See http://home.okstate.edu/homepages.nsf/toc/isdhome.

Instructional Materials--Tables of Specifications: Tables of specifications are used to show how tests are developed commensurate with the amount of time spent on objectives and the cognitive level at which the objective was written. They can be shared with students as study guides or viewed by evaluators to show that the tests were representative of the materials taught in the class. They can be easily scanned into the electronic system.

Instructional Materials--Instructional Aids: Almost anything can be used as an instructional aid. Generally in traditional settings instructional aids are non-paper presentation or example mechanism. These can be digitally photographed for capture electronically. The scope is somewhat broader in the electronic course. Here aids can include job aids, performance systems, photographic representations, diagrams, charts, video of objects, and the like. All of these can be reproduced in the electronic portfolio. Any representation that is not activated should be described. See http://home.okstate.edu/homepages.nsf/toc/isdhome.

Instructional Materials--Concept Maps: Teachers or students show diagrammatically the relationships between concepts and ideas with concept maps in traditional settings. These are graphical portrayals of the relationships between pieces of information. These can be scanned in when developed in traditional classes and are created in electronic form when done as part of a webbed class. When done electronically these are usually developed by a program designed to create concept maps whose output is loadable into other programs. Either way concept maps can be easily incorporated into the electronic portfolio.

Instructional Materials--Computer Software: Computer software obviously is already resident on the computer and can be placed directly into the electronic portfolio. If the software need data to be activated the location of example data should be included or linked to so that the porfolio reader can experiment with the program if that is desired.

Instructional Materials--Simulations: In traditional settings simulations are likely to be paper tasks where several students read or interact based on a script describing how different actors would respond in a given situation. This can be scanned into the portfolio. In an electronic setting the action may play out for the learner in a precreated scenario or the learner may be an active participant. Active participation usually is a synchronous activity. This kind of activity can be captured as an electronic narrative.

Instructional Materials--DemonstrationVideo/Film: Copies of films and videos created by the teacher can be digitized and included at least in synopsis form in the portfolio. If permissions were not obtained from all participants the materials should not be copied electronically.

Samples of Student Work--Papers: Student papers can be scanned into the electronic portfolio. Papers developed in an online course is presented in an electronic format and can be directly transferred to the portfolio.

Samples of Student Work--Course Grade/Test Profiles: In traditional classes grade profiles, showing the distribution of student grades, are constructed by hand and can be scanned into the electronic portfolio. In the online course the computer that scores the test in most cases generates these distributions and they are therefore available directly.

Samples of Student Work--Projects: Projects traditionally are either paper or tangible realia. These can be scanned or videoed in operation to show how they work. Online projects are potentially more diverse but because they are already digitized easy to capture for the portfolio. The online project as it is designed to perform should be activated or described in the portfolio.

Samples of Student Work--Photographs, Videos, or Audio Recordings: Any visual or audio recording can be translated into digitized examples for the portfolio. Photos that are not digitized can be scanned. This works in both the traditional and the electronic environment.

Samples of Student Work--During-Course Feedback/End of Course Evaluations: In traditional classes this can be tests, questionnaires, interviews and the like. All of these forms are scannable and can be placed in the electronic portfolio. In online courses the data is usually from evaluation forms which are emailed directly to the course instructor. These can be saved and summarized or inserted directly as examples in to the electronic portfolio.

Academic Products Related to Teaching--Research and Publications: Research is presented in written form in both traditional and electronic settings. This makes it easy to place it into the portfolio. A caution should be noted here: research that is placed on the web is considered published by some journals and therefore it is not later acceptable for publication by them. This caution should be noted if the electronic portfolio is to be placed on a website that is not password protected.

Academic Products Related to Teaching--Case Study Write-Ups: Students develop case study write-ups in traditional classes and present them as paper products that are scannable. In the online format students discuss cases and come to conclusions in chat rooms, on bulletin boards, on threaded databases. These then become collaborative documents. Each can be easily captured for the portfolio but should be explained so that an evaluator can understand how the case-based data were generated.

Personal Documents: The traditional resume or vita can be easily scanned into the electronic format, as can other personal documents such as autobiographical sketches, statements about philosophy of teaching, letters of recommendations and peer assessments. All of these may be included in the electronic portfolio but there is no difference between the traditional and the online versions unless the online documents are pictorial or moving as in video.

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AN EVALUATION OF THE EFFECTIVENESS OF SUMMER INSTITUTES FOR RURAL TEACHERS OF STUDENTS WITH LOW INCIDENCE DISABILITIES

Teachers in rural areas often have difficulty obtaining new information as well as college credits needed for recertification or professional development. It may be particularly difficult for teachers to gain information in specialized areas such as low incidence disabilities. Options available to teachers in rural areas include correspondence courses, web-based courses, live audio and/or video courses, video-taped course, and travel to a distant site. Travel to a distant site includes traditional weekly course offerings, weekend courses, as well as intensive summer institutes. Advantages and disadvantages exist for all of these methods of professional development. The purpose of this presentation is to discuss the results of a long-term (i.e., 2 years) follow-up evaluation of summer institutes as a method of providing information regarding low incidence disabilities.

Method

Participants

Participants included 20 teachers and related service providers from throughout the state of Nevada who participated in two summer institutes sponsored by a U. S. Department of Education personnel preparation grant (i.e., Project PRESS: Preparing Educators of Students with Severe Disabilities). Each individual participated in a basic and advanced institute pertaining to teaching practices for students with severe, multiple disabilities and students with emotional disturbance. Nineteen females participated while only one male was involved. At the time of the interviews, six participants were elementary general education teachers. Nine participants were special education teachers. Four related service providers (i.e., speech pathology, school counseling) also participated in both institutes. The final participant, formerly a special education teacher, was currently the director of a child care facility.

Procedures

After obtaining informed consent and arranging a mutually convenient time, telephone interviews, ranging from less than 5 minutes to 25 minutes, were conducted with each participant. Each interview was audiotaped and subsequently a verbatim transcription was made. Each participant was asked the same basic questions with follow-up clarification questions if needed. The interview protocol is included in Table 1.

Table 1

Protocol Used For Telephone Interviews with Participants

1. In addition to Project PRESS summer institutes, have you ever participated in any other summer institutes?
2. In general, what did you find beneficial about participating in the summer institutes sponsored by Project PRESS or others?
3. Were there aspects of the summer institutes that were not beneficial? If yes, describe these aspects.
4. Describe how your involvement in the summer institutes benefited your students.
5. Describe specific instances of how you implemented knowledge from the summer institutes in your job responsibilities.
6. Why did you enroll in the first Project PRESS summer institute?
7. Why did you enroll in the second Project PRESS summer institute?
8. What role did the fact that the Project PRESS institutes were supported by a grant influence your decision to enroll?
9. Did you experience any unanticipated benefits from your participation in the summer institutes?
10. Did you experience any unanticipated negative outcomes from your participation in the summer institutes?
11. Did you form any continuing networks of support with other summer institute participants? If yes, please describe. If no, please discuss.
12. Describe how likely or unlikely you are to participate in summer institutes in the future. What factors will influence your decision?

Data Analysis

The authors read and re-read each interview to identify specific themes that emerged. Themes emerged from repeated words, phrases, constructs or ideas in the transcripts, rather than themes being determined prior to data collection and analysis (Patton, 1990). Themes expressed by more than one participant were classified into categories. Each participant response was reviewed to determine if it belonged in an existing category or if it was a new theme belonging in a new category. Through repeated readings of the transcripts, all responses were considered and reconsidered to confirm or redefine the categories until all relevant data were accommodated.

Results

Professional Impact

Six themes emerged in the area of professional impact: (a) information was implemented in classrooms, (b) long-lasting networks of support were established, (c) information was passed onto others who did not participate in the institutes, (d) changes in philosophy and attitudes occurred, (e) information was obtained on laws and policies related to special education, and (f) frustration with attempting to make building-level changes upon returning to their schools. Each is discussed below, under a quote from a participant that illustrates the theme.

"We Got Things We Could Use In Our Classrooms"

Every participant was overwhelmed with the amount of practical information that they could take back to their classrooms and schools for immediate implementation. As part of each institute, participants received a 3-inch binder of materials for discussion and use. Virtually all of the participants made reference to using these materials and forms in their on-going professional responsibilities. In many instances, the participants adapted information for use with students without disabilities as well as those with milder disabilities than was the focus of the institutes. The participants frequently mentioned strategies pertaining to implementing successful inclusive education (e.g., instructional matrices, making accommodations), developing positive behavioral support plans, documenting student progress, implementing peer advocacy / tutoring programs, and developing functional IEP goals and objectives (e.g., community-based instruction).

"Other Peoples' Ideas Were Priceless"

The majority (i.e., 17) of participants reported that they formed lasting networks of support within their local areas as well as across the state. In many instances participants from the same school district formed closer ties and working relations that were still active 2 years following the second institute (i.e., at the time of the interviews). Similarly, participants formed lasting support networks with others who might be located hundreds of miles away in another district. They indicated that they saw each other at state conferences and meetings, frequently called one another, and/or frequently e-mailed others. These on-going contacts were friendships as well as professional relationships; participants discussed maintaining these contacts to exchange strategies and ideas and to share information regarding resources. Many participants discussed how important these networks were given their isolation due to the rural and remote nature of Nevada.

"It Gave Me the Confidence to ... Facilitate ... A Collegial Relationship with My Regular Ed Peers"

The majority of participants reported sharing information with others upon their return to their schools. Although most participants discussed sharing information with other professionals, some participants also included parents and paraprofessionals when they shared information at the local level. Four of the participants actually presented information based on institute material at in-service trainings and/or teacher meetings at their schools. One teacher reported relying heavily on institute material in her role as her school's coordinator of a "teachers assisting teachers" program. Another teacher reported that the information he acquired in the institutes helped him in a due process hearing. However, the majority of information shared with others was on a more informal basis: (a) through IEP meetings, (b) in the teachers' lounge, (c) teachers who did not attend the institutes dropping by with specific questions, and (d) sharing materials from their binders.

"It's Really Made a Big Difference with My Thinking"

Several participants reported broadening their perceptions of students who could be successfully included in general education classes as well as facilitating an understanding of the benefits of inclusion. Additionally, attitudes changed from thinking inclusion meant simply physically placing students with disabilities in regular education classes to realizing that specific strategies must be implemented for successful inclusion.

"I Was ... Enlightened By ... Laws That Were In Effect and My Obligations As An Educator"

A few participants indicated that current law and policy regarding their obligations as regular education teachers surprised them. Additionally, one special education teacher reported sharing this type of information with the regular education teachers in her school.

"Change Is Always Hard" "I Am Just Tearing My Hair Out!"

A few participants reported their frustration upon returning to their local sites and attempting to implement change within their buildings. Three of the participants discussed the importance of cultivating administrative support. One of these participants was watching for workshops to suggest to her administrators. Another frustration related to learning to work with other adults rather than interacting with students. Another frustration related to staffing issues and lack of resources.

Logistical Considerations

"Get It Over In A Shorter Period of Time"

Several of the participants reported that attending a summer institute over a period of two weeks "was a really good way to present it." Attending over two weeks allowed them to earn two graduate credits as well as limited the amount of time they were away from home. The concentrated nature of a summer institute appealed to other participants.

I Would Have Enrolled Regardless of Funding"

Half of the participants reported that the fact that the institutes were grant supported had no effect on their decision to enroll. They reported that they would have enrolled regardless because of the timing, topics to be covered, or the opportunity to earn two graduate credits in 2 weeks.

"The Grant Made A Difference"

On the other hand, half of the participants reported that receiving funding made it possible for them to attend the institutes or provided the incentive they needed to attend. For example, participants specifically mentioned insufficient personal funds would have prohibited them from attending the institute. Other participants discussed that grant funding "was more of an incentive to really do it."

Participation in Future Institutes

Participants reported several factors would influence the likelihood of participation in future institutes. By far the most common influencing factor related to the topic. Other factors included (a) logistical factors (e.g., scheduling, finances, location) and (b) earning recertification credits.

Discussion

It is noteworthy that 2 years after the second summer institute the participants were able to describe specific strategies and materials being implemented on the job as a result of their involvement. The practical nature of the content of the summer institutes contributed to the value the participants placed on the information received. Not only did the content of the institutes have a long lasting impact, the support networks formed among participants were continuing at the 2 year follow-up.

Rural special education teachers and related service providers are often isolated from other professionals who are in similar roles. Improved technology such as distance education, correspondence courses, videotape and web-based courses are often used by these educators for professional development and to access the latest information related to their roles. However, these technologies, as valuable as they are, do not allow for a variety of the elements that participants in the summer institute reported as particularly valuable. Chief among the advantages of a summer institute is the ability to form a lasting network of professionals to call on for information, resources or support. Interestingly, these lasting networks were formed in only a 2 week time frame. In addition, the intense nature of the summer institute did not seem to be a disadvantage in the amount of information acquired and generalized to the teaching setting. Further, many of the participants indicated that the intense time frame was needed by professionals living at a considerable distance from a university.

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FACILITATING EFFECTIVE INCLUSION THROUGH STAFF DEVELOPMENT

Inclusion of students with disabilities is increasingly emphasized as a recommended educational practice. As a result, the roles of both special education and general education teachers are changing. Frequently, both general and special educators will indicate that they feel they have not had appropriate training related to effective inclusion. For example, general education teachers are typically not well prepared to make modifications to academic material and special education teachers are infrequently prepared to collaborate with other professionals. The purpose of this presentation is to present a staff development project implemented in a rural school district.

The model implemented was a practical model that is easily replicated in other rural areas near a university or college. This model involved the use of university pre-service students as substitute teachers to allow collaborative meetings to occur between the special education teacher and the general education teachers. Not only did these pre-service students participate in this project as substitutes, they also participated in the collaborative meetings in a staggered fashion. Thus, they received educational as well as practical experiences. (It should be noted that in Nevada to be a substitute teacher one must have 60 university or college credits with 6 of those credits being in education.) Additionally, a university professor was involved in the collaborative meetings as one method of facilitating staff development. In a second method of facilitating staff development, the university professor conducted in-service presentations focused on topics suggested by the staff of the schools.

Project Description

Setting

This project was conducted in a rural high school and middle school in a school district isolated by its location. The schools were reached by one of two narrow, windy mountain roads that are frequently impassable due to winter storms. There were 151 students, grade 9 through 12, in the high school. Of these students, 19 were identified as special education students, with the majority having mild disabilities. Fifteen teachers, two teaching assistants, and one administrator were employed at the high school. Only one of the teachers was a special education teacher; all of the others were general education teachers. The middle school enrolled 143 students, including 16 students identified as special education students. Again, the majority of these students had mild disabilities. Eight teachers, one part-time teaching assistant, and one administrator were employed at the middle school. As was the case at the high school, only one of the teachers was a special education teacher.

University Student Participants

Four university students participated in the project. Two of the students were involved for the entire school year; while the others were each involved for one semester only due to scheduling conflicts. The students, all female, ranged in age from 23 to 41 years (average age of

30 years). Three of the students were in the undergraduate teacher preparation program. Two of these students were majoring in elementary and special education (i.e., grades K-12) while the third was in secondary education (with a major in business education and a minor in special education). The fourth student was in Masters degree that was also going to result in a first-time special education license (grades K-12). The only student who had previous experience with secondary-age special education students was the student majoring in secondary education.

Project Funding

The project described in this presentation was made possible through an Outreach Enhancement Grant from the University of Nevada, Reno. This grant program was established in recognition of the University's commitment to the Land Grant ideal which includes using University "ingenuity and expertise to help communities respond to critical needs." The competitive grant process required that

(a) the issue or concern to be addressed must be of significance to the community,
(b) the proposed project must represent new or expanded outreach activities, exemplify a high degree of innovation and show mutual benefits to both the community and the University,
(c) the purpose to be accomplished must be clearly stated,
(d) citizens from the community or their representatives must be involved (e.g., defining issues, planning, or approving the activities, or implementing or evaluating the proposed project),
(e) University students must be involved and play a significant role in the proposed effort,
(f) there must be potential for continued funding to support ongoing activities following conclusion of the specific project, and
(g) the proposed activities should show a high potential for the efficient and effective use of the resources requested.

During the spring prior to project implementation, the project director met with a central office administrator of a rural school district to solicit involvement in the proposed project. This administrator, the director of special education services and the director of personnel, gained the commitment of the schools to be involved. The proposed project was then developed collaboratively with this administrator. The project was funded by the University of Nevada, Reno in the amount of $2,400. These funds were primarily used to reimburse the school district for the costs associated with paying the university students as substitute teachers.

Project Overview

Once a month, the project director, along with three university students, went to either the high school or middle school to observe and meet with pairs of teachers (i.e., a special education teacher and general education teacher) to address concerns. For example, first period was spent observing a specific student as requested by the teachers and second period then involved collaborative problem solving. This pattern was repeated until the end of the school day. Approximately every 8 weeks the school district dismissed their students early so that more formal staff development activities occurred through in-service training. The topics of the training were determined by school district staff as well as from the observations and collaborative problem-solving meetings. Four in-service trainings were scheduled for the school year.

The involvement of the university students allowed the collaborative meetings to occur in that they substituted for the special and general education teachers during the periods in which collaborative meetings occurred. However, in order that the university students benefit educationally, as well as gain the practical experience of substituting, they also had opportunities to participate in the collaborative meetings. During each visit, the students rotated activities of observing, participating in collaborative meetings, and substituting. For example, during first period Student A observed the secondary student targeted for the collaborative meeting, Student B observed the general education teacher who was to participate in the collaborative meeting, and Student C observed the special education teacher. During second period, Student A participated in the collaborative meeting while Students B and C substituted for the teachers observed during the previous period. The three students rotated through each role in order to experience each role, each visit: observer, collaborator, and teacher.

Project Evaluation

Project outcomes were evaluated in several ways: (a) the high school and middle school teachers completed satisfaction surveys following each in-service presentation, (b) the teachers anonymously completed a brief questionnaire regarding their involvement in the project and the perceived benefits, (c) the two special education teachers, due to their extensive involvement, were interviewed regarding their perceptions, (d) the administrator involved in developing the project was interviewed regarding her perceptions, and (e) the university students were interviewed regarding their involvement upon completion of their participation.

In-service Satisfaction Surveys

Only three of four scheduled in-service workshops occurred; one training was canceled because school was closed early due to snow. Table 1 summarizes the results of the satisfaction surveys for each presentation. The surveys were designed in a Likert-scale format with ratings from 1 to 7, with 1 being poor and 7 being excellent. The directions requested that the number be circled that best described the person's reaction to each item. Additionally, space was provided for written comments.

Table 1
Summary of the Average Ratings for the In-service Satisfaction Surveys

	Workshop #1: Modifications	Workshop #2: Discipline: Legal Requirements	Workshop #3: Classroom / Behavior Management
Organization of workshop	6	6	6
Clarity of workshop objectives	6	6	6
Work of presenter	6	6	6
Ideas and activities of workshop	5	5	5
Scope of workshop	5	6	6
Benefits of attendance	5	5	5
Overall rating	5	6	6

The written comments tended to be positive and commented on organization, openness to questions, clarity, knowledge of the presenter, group discussions, and activities.

Teacher Questionnaire

At the last in-service workshop teachers were given a short, open-ended questionnaire to complete regarding their participation and their perceived benefits of the in-service workshops and collaborative meetings. The perceived benefits of the in-service presentations included reinforcing previous knowledge, interacting with other staff, sharing common problems, and bringing an isolated staff closer via common goals. Some teachers thought that the secondary students indirectly benefited from these presentations in that the teachers were more confident and had reconceptualized methods of interacting with students.

Teachers thought they benefited from the collaborative meetings from the specific problem solving that occurred. The time provided to deal specifically with individual students and unique concerns was viewed as particularly beneficial. The "outside input" was also regarded as advantageous. The secondary students benefited in that the teachers were given suggestions that were implemented and that (in the words of one teacher) "worked well!"

Special Education Teacher and Administrator Interviews

Both special education teachers thought it was advantageous to have the "outside influence" in terms of providing information and assisting with "brainstorming." They both felt that the general education teachers gained a greater awareness of special education issues. The collaborative meetings were viewed as the most beneficial aspect of the project. The joint problem solving was believed to result in students being better served. In the high school, the special education teacher reported that general education teachers came back to ask follow-up questions and seemed to take more responsibility for the special education students. Both special education teachers thought that a greater number of accommodations were implemented in general education classes.

The special education administrator thought the project was especially beneficial because it provided the school district with a model that they could implement following the completion of the University's outreach project. As she stated, "For the cost of two subs per month, I can ensure that the teachers are getting that time together to discuss what issues are facing them in the classroom and how to deal with that." As did the special education teachers, the administrator thought that it was particularly beneficial to have "an outside agency come in" to provide information and to facilitate collaborative meetings. She thought the staff of the district "took it more serious" because the trainer/facilitator was not from the school district. She also reported that general education teachers were paying greater attention to individual student needs and modifying in a more appropriate manner as indicated by teacher discussions she overheard.

University Student Interviews

All of the university students felt the experience was extremely beneficial and better prepared them for their future professions. Two of the students thought that the most beneficial aspect was participating in the collaborative meetings while the other two thought the observations were most beneficial. All of the students thought the in-service workshops were informative and provided them with different information than they had obtained to date in their teacher preparation classes at the university. They all found the collaborative meetings to be advantageous due to the group brainstorming that occurred. Unfortunately, they were disappointed in their perceived lack of follow-through with many of the suggestions. Although all of the students were nervous prior to the start of their participation, they all became more confident as the project progressed.

Conclusion

From the questionnaires and interviews completed as part of the evaluation of this outreach project it appears that the project was successful in achieving its goals. Not only did the school district teachers enhance their knowledge and skills, but the university students broadened their experiences and knowledge. The success of this project might be attributed to the school-wide nature of the project (all teachers and teaching assistants were involved) as well as to the fact that the project was extended throughout the entire school year. The on-going nature of the project allowed teachers to try out various recommendations and to get feedback. The fact that the project also had a direct relationship to the teachers' day-to-day activities (i.e., they selected the students to focus on in the collaborative meetings) may have contributed to the perceived successfulness. Additionally, the topics of the in-service workshops were determined by school district personnel. This type of involvement in planning and implementing staff development is critical to its efficacy.

In addition to benefiting the personnel of the high school and middle school, pre-service university students also benefited. These students felt they received practical experiences that would go a long way in benefiting them in their future university internships and as well as in their professional careers.

This project was a relatively low-cost means of providing training to current teachers and future teachers with indirect benefit to public school students.

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ATTITUDES OF PRESERVICE GENERAL EDUCATORS TOWARD TEACHING STUDENTS WITH DISABILITITES: INVESTIGIATING THE EFFECTS OF CONFIDENCE LEVELS IN CLINICAL SKILLS

Introduction

Three federal laws and rulings have shaped the fields of education and special education to the extent that discrimination against students with disabilities is on the decline. The Individuals with Disabilities Act of 1990 (IDEA), Section 504 of the Rehabilitation Act of 1973, and Larry P. v. Riles are the cornerstones for these challenges. Collectively, they state that a student is entitled to a "free and appropriate education" in the "least restrictive environment". To deny a student with disabilities an adequate, not best, education is a direct violation of his or her civil rights (Zachry, 1995).

Several legislated building blocks have proceeded and followed the above stated laws and rulings. A short etiology culminating with the current functioning paradigm is in order to better understand the direction and intent of this study. The progression of the changing approaches to providing an adequate education for the students with disabilities will be explored along with the downfalls and shortcomings of the past paradigms of special and regular education. The formative development of attitudes and confidence levels of regular education teachers toward students with special needs will be traced and documented.

Prior to 1975, identified students with disabilities were often taught in self-contained classrooms, removed from the interaction with regular education students and the instruction of regular education teachers. Upon qualifying for special education services, the student with a disability was essentially removed from the mainstream of general education afforded to the majority of students without limitations. Another view of this paradigm is regular education staff did not have to work with nor adapt their teaching styles to the atypical child. A number of studies showed that the then functioning paradigm was not accomplishing intended goals of quality education. The results of this research reflected inadequate instruction, psychological and social damage to students, and racial, linguistic, and cultural bias (Dunn, 1968). A growing discontent with this approach resulted in the enactment of P.L. 94-142 (now part B of IDEA) in 1975.

P.L. 94-142 helped formulate the concept of mainstreaming, which essentially meant that the student who qualified for special services would be allowed to participate in regular education routines as decided by the student's parents and the school's placement team. The students identified with disabilities were often still removed from the regular class and received academic instruction through pull-out programs. The instruction for these students was carried out in a resource room where the special education teacher and support staff worked with the child. Little interaction and collaboration occurred between the general education teacher and the special education teacher. This resulted in the student with special needs interacting with the general education students only during such times as music, physical education, library, lunch, recess, and other non-academic blocks of time. During field trips for the regular education students, the special needs students were often excluded because of the accommodations that would need to be made to have them attend. The same concerns of bias, inadequate instruction, and social and psychological discrepancies were still confronting educators even with the changed approach to educating these students (Wang, Reynolds, & Walberg, 1987). General education teachers were still not required to alter teaching styles or take responsibility for the atypical student.

In 1986, P.L. 99-457 was enacted. This legislation provided services to identified children 3-5 years of age. P.L. 99-457 is now part H of IDEA and identification and services have been extended from birth to five. The idea was to identify and provide workable interventions that could help these children close the gap between their academic deficiencies and those of children without limitations by the time they started school. These children would enter school at five years of age, and if qualified for special education services, start the process of receiving academic services in a resource room with limited interaction with regular education teachers and students.

In 1990, IDEA was enacted to better approach the equal education opportunities for all atypical students. It was also hoped that this legislation would improve on the concerns of other earlier paradigms. This law included both P.L. 94-142 and P.L. 99-457 with added amendments. A new term emerged referred to as inclusion where students would/should be instructed in the general education classroom as much as deemed possible. This decision would be made by the multidisciplinary team of the particular school (parents are part of this team). Regular education teachers were now faced with the dilemma of adapting their teaching techniques and their classroom to all students, for the first time in thirty years. In summary, the progression has gone from self-contained classrooms prior to 1975, to mainstreaming during the 1970s and 80s, to actual instruction by the regular education teacher in the regular classroom as legislated in 1990 (with support services provided in the regular education classroom by special education staff).

In all fairness to the legislated change in paradigms, Ashbaugh and Kasten (1995) point out those formalized, didactic approaches that emphasize just one best way to handle a decision are usually inappropriate. The court decisions and legislation enacted since the 1970s have been geared to improve the education of students that lie outside normalcy of the regular education student. The exact label or category of each student is not the issue. Noll (1997) also acknowledges that political influences, governmental actions, court decisions, professional militancy, parental power, and student assertion all contribute to the control and drive which bring about change or reluctance to change (thus staying with the status quo). Realizing that not one option is the sole answer and that a number of variables contribute to change, an exploration of resistance toward these laws and court decisions is needed. According to Asbaugh and Kasten (1995), in education, it is impossible to know anything in general without knowing something in particular. This introduces the next section on the barriers of implementing IDEA in many of the public schools across our nation.

Legislating and challenging nondiscrimination and equality can be done through the courts and congress, but barriers to the full acceptance of students with special needs in general education remain. We cannot legislate acceptance (Antonak & Larrivee, 1995). Herein lies the purpose for this study and the reasons behind why this non-acceptance is resistant to change. These barriers can be altered with a critical pragmatic approach of reevaluation, deconstruction, reconstruction, new theory, new data, and collaboration among all staff members (Meyen & Skrtic, 1995). Bandura (1977) posits that an individual's personal expectations for success determine how an individual will respond to adverse situations (i.e., atypicality). This study equates this premise with the study's hypothesis: The higher the self-efficacy level of preservice general educators, the more positive attitudes toward teaching students with disabilities.

Method

Subjects

Subjects for this study were 133 preservice general education majors from a large land grant university. They were all enrolled in the required education course focusing on teaching students with exceptionalities. The students were administered two scales and a demographic questionnaire.

Instruments

1. The Special Needs Confidence Scale- a 5-point Likert scale instrument that measures overall confidence in teaching students with special needs.
2. Opinions Relative to the Integration of Students with Disabilities- a 6-point Likert scale instrument which measures attitudes toward special learners.

Procedure

The students completed the two surveys with the demographic questionnaire at the end of the spring semester.

The Special Needs Confidence Scale consisted of 46 items which were factor analyzed into four factors consisting of: CF1) I am confident that I have the tools to deal with atypical students in my classroom, CF2) I am confident in dealing with specific disabilities, CF3) I can teach all students including most mildly disabled students, and CF4) I can utilize assessments, technologies, and media to work with more severe disabilities.

The Opinions Relative to the Integration of Students with Disabilities had been factor analyzed from a previous study into four factors: AF1) Benefits of integration, AF2) Integrated classroom management, AF3) Ability to teach students with disabilities, and AF4) Special vs. integrated education.

The Demographic Questionnaire consisted of eleven questions concerning: Age, Gender, Ethnicity, Disability, College Major, Certification, Class Ranking, Marital Status, Children, Children with Disabilities, and Future Worksetting. This study focused on the Age and Future Worksettings of the preservice teachers. These two variables were compared to the two factor analyzed scales for correlations and linear relationships. An ANOVA with post hoc was also completed to check differences.

Results

An ANOVA was used with WORKSETTING and the eight factors of the two instruments. A significant difference was found between students wanting to work in a rural (up to 25,000 population) worksetting and students wanting to work in an urban setting (>100,000 population) (mean difference of .3485, significant @ .05) on AF1 (Benefits of Integration). A Scheffe suggested that rural bound preservice teachers have a higher attitude toward the benefits of integration than those wanting to seek employment in urban areas. An ANOVA was also run with AGE and the eight factors of the two surveys. A Scheffe showed a significant difference (mean difference of 1.1635 @ .05) between students 18-19 and 26> on AF3. This suggests that the younger preservice teachers possess a higher attitude toward teaching students with disabilities than older preservice teachers.

A Pearson Correlation between the overall Attitude Scale and the Confidence Scale showed a significant relationship between the two scales (.216 @ 0.05 level, 2-tailed). Correlations between the four factors of each instrument showed a significant relationship between factors AF1 and CF1 (.178), CF2 (.198), & CF4 (.184) AND AF3 and CF1 (.178)), CF2 (.213), & CF3 (.214) (@.05 level, 2-tailed). This suggests a relationship between confidence in having the tools to deal with atypical students in the classroom, confidence in dealing with specific disabilities, and confidence in utilizing assessments, technologies, & media in working with more severe disabilities AND the preservice teacher's attitudes toward the benefits of integration and the their ability teach students with disabilities.

A multiple regression was used between the four factors of each instrument. A significant R (.206 @ .05) was found between AF1 and CF2. R Square was .043 @.05 level. This suggests that the higher the confidence in dealing with specific disabilities, the better the attitude toward the benefits of integration. A significant R (.207 @ .05) and R Square (.043 @ .05) were found between CF2 and AF3. This suggests that the higher the confidence in dealing with specific disabilities, the better the attitude about the preservice teacher's ability to teach students with disabilities.

Discussion

This study concurs with previous studies relating self-efficacy and confidence levels with attitudinal levels toward working with students having special needs. The hypothesis was supported.

If training institutions are to assist in breaking down the barriers of general educators' attitudes toward teaching students with special needs, then training might need to be extended to greater depths to help raise the confidence level of preservice teachers. Training has been shown to be an influence with a teacher's self-efficacy, confidence, and a suggestion of influence over attitudes toward teaching students with special needs.

The results of this study suggest that preservice teachers planning on working professionally in smaller districts feel more secure in dealing with students having special needs than those wanting to gain employment in larger cities. This can lead to reevaluating inservice needs in larger cities and in rural areas alike. Preaching to the choir is not always a best practices tool, yet to assume competence in teaching special needs students cannot be taken for granted. Age was also a variable that tended to suggest that the younger preservice teachers are more open to atypicality among students than the older preservice teachers.

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"ASSISTING PRESERVICE TEACHERS WITH SPECIAL NEEDS: FOUR TRUE STORIES"

As we stand on the threshold of a new age in teacher education and approach an era in which the demand for teachers is increasing, we must be concerned about not only the number of teachers we are producing, but also the quality of those teachers. We must find ways to more holistically assess the skills of our teacher candidates and to go beyond the "paper screening" that we have relied on in the past so that we can better identify prospective teachers from all cultural/racial/ethnic and/or underrepresented groups, even those who might not have been totally successful as undergraduates in the traditional academic sense due to cultural, linguistic, and or disability-related differences. We must recognize that interpersonal skills are playing an increasingly important role in today's diverse classrooms. We must find a way to attract and retain a wider scope of prospective teachers for tomorrow's children in both general and special education.

At Gonzaga University, we began with a model first developed at the University of Redlands and then revamped it to meet our particular needs. We wanted to find a way to screen out program applicants who showed little potential for success in our program and to get to know the skills and needs of our prospective students. We also wanted to introduce the key themes of our program so students would know up front what our program emphasizes and what we value as professionals. In particular, we wanted to introduce the concept of reflective thinking, the idea that teaching is an interpersonal and professional act, the idea of the value of developing conflict resolution skills, and the philosophy we share in our belief in the value of multiple perspectives and ways of doing. We also wanted to introduce students to the importance of the development of their professional skills, including humor, self-knowledge, resiliency factors, collaboration, respect for the field of education, how to think on their feet, and how to collaborate. We based our model on the literature on reflective thinking (Posner was our true base), on the literature about adult learners, on the teacher induction literature, and on surveys done by the Washington State Professional Education Advisory Board about the skills needed by beginning teachers.

We decided to structure the Lab as a Saturday morning, four-hour session with a variety of activities. We would begin with a welcome and an introduction from the Associate Dean, introducing the faculty, and explaining the rationale for the Lab. We would then discuss advising, state regulations, and distribute some of the paperwork we're required to file. We decided we wanted to teach a new skill in the Lab and decided to investigate various instruments we might use during the Lab. We considered many, including the Stress Test (Muller and Smith), the Survey on Teaching Roles, The Keirsey Temperament Sorter, the How Do You Handle Conflict? test (Allyn and Bacon), the Learning Style Inventory (Silver and Hanson), and the Risk-Taking Behavior Questionnaire. We finally chose the True Colors materials (True Colors Communications Group, 1990) which are based on Jungian theory and are somewhat related to the Meyers-Briggs test. The True Colors materials help individuals (children and/or adults) identify four basic personality types; the materials include suggested classroom activities and videos.

The products we take away from the Lab are the state-required forms, the faculty observers' notes from the leaderless group discussion, and the reflective writing sample. The Associate Dean then reviews all the materials, meets with students who were identified as potentially problematic, and files the materials in their departmental file.

To date, approximately 450 Gonzaga students have completed the process. Since we initiated this process, not one student has been dropped from the program after being admitted. We are convinced that in the cases of students we have not admitted that our collective judgments were justified. We believe that our teacher preparation program has been strengthened by more careful attention to the admissions process because we are able to use the insights gained during the assessment as diagnostic information to better meet individual student's needs. This project has enabled us to be much more clear with prospective students about the ideas and values embedded in our program, including our commitment to cross-cultural teaching, our belief in the necessity of effective interpersonal skills, and our commitment to diversity. We have also been able to recruit more students from under-represented groups because of our move to a more holistic admissions process.

We developed a Fair Process Manual to apprise students of their rights and responsibilities and to make them aware of the monitoring processes we would be using to assess their progress in the teacher education program. This document was drafted by the various directors of programs within the School of Education and then was rewritten to correct for style. The document was then sent to our Academic Vice President and to the university's corporate counsel for an extensive review. We made some changes and then published the document; it has been revised since our administrative restructuring to reflect current job titles and processes. The Fair Process Manual is distributed to all incoming students each semester. We also developed a receipt form which students sign to acknowledge that they received the Manual and promise to read it; students receive a copy of that form and the original is filed in their certification file. We use a system we call "Yellow Lights" in which our faculty make anecdotal records of any incidents which caused them concern. We can then track our students' progress and meet with them to discuss our concerns. Students who have self-disclosed their disabilities work with our Student Disabilities Services center and faculty are notified each semester of any students needing accommodations in order to be successful.

During the second week of the semester prior to the student teaching semester, prospective candidates must attend the Application To Student Teach meeting. This is an intensive meeting with the Director of Student Teaching, Director of Field Experience, and Certification Officer each presenting procedures for the application process. The meeting begins with an introduction by the Director of Student Teaching regarding student teaching and general information about the upcoming experience. The Director of Field Experience helps facilitate the creation of an information packet that will be given to prospective cooperating teachers. The Certification Officer takes care of the FBI/WSP process, Character and Fitness forms, and endorsement concerns.

Students are expected to possess 3.0 g.p.a. in their major, a 3.0 g.p.a. in the professional education courses, a 2.5 g.p.a. overall, and acceptable standardized test scores. If students do not have the acceptable g.p.a., the student may petition to student teach following steps in our Fair Process Manual. In addition, students are expected to obtain two recommendations from their academic advisor along with a recommendation from a person who has information about their potential as a prospective student teacher. All faculty in the Teacher Education Program give input on a Faculty Review form about the skills and abilities of each student teacher candidate. The Director of Student Teaching then locates placements for the prospective student teachers within a 20-mile radius of the university.

The students then begin preparation for the semester in which they will student teach. An orientation meeting is held for all student teachers just prior to beginning their 16-week student teaching experience. During the student teaching experience students work closely with their cooperating teachers. Each student teacher is assigned a university supervisor. The supervisors observe the students a minimum of ten visitations during the course of the semester. In addition, the university supervisor meets with the cooperating teacher and designated school administrator checking on how things are going for the student teacher. The university supervisors and Director of Student Teaching communicate on a weekly basis about the progress of each student teacher. The university supervisor acts as a liaison between the school and university.

If at any point during the semester a student teacher is having difficulty, the Director of Student Teaching is immediately contacted. A Remediation Plan may be implemented at this point based on input from the cooperating teacher, building administrator, university supervisor, and Director of Student Teaching. If the student teacher cannot meet the competencies outlined in the Plan, then the student teaching experience is terminated. Further help may be given to the student with a second chance given to the student in another site, usually the following semester.

Student teachers attend several seminars in conjunction with student teaching for debriefing, sharing of new ideas, and preparation of a Career Placement Portfolio. At the end of student teaching a Review Board is held to discuss the final evaluation and recommend for teacher certification. A celebration concludes the student teaching experience with congratulatory remarks for student teachers and thank yous for cooperating teachers and university supervisors.

As we look at our process for teacher candidates, every opportunity is given to accommodate students who may be from an underrepresented group, specifically disability-related differences. Gonzaga University has in a place provisions for accommodations based on Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990, Title III.

During the late 1980s colleges experienced a dramatic increase in the number of students with disabilities (Vogel, S. & Adelman, P., 1993). The increase is due in part to the increase in litigation and awareness of the legal requirements with respect to college students with disabilities. The Americans with Disabilities Act of 1990 (ADA) is the prime legislative extension of Section 504 of the Vocational Rehabilitation Act of 1973. The ADA prohibits private employers, state and local governments, employment agencies and labor unions from discriminating against qualified individuals with disabilities. A student with a disability is an individual who, with or without reasonable accommodation, can perform the essential functions of the job or role in question. A college is required to make an accommodation for the person with a disability if it would not impose an undue hardship on the operation of the institution. Undue hardship is defined as an action requiring significant difficulty or expense when considered in light of such factors as the size, financial resources, and nature or structure of the organization.

Since Gonzaga University is a private institution, the requirements of ADA that apply fall under Title III. Title III prohibits discrimination against persons with disabilities in "places of public accommodation" by private institutions." The ADA, under Title III, "mandates that a provider of goods and services make reasonable modifications to its rules, practices, and policies to provide goods and services to people with disabilities, unless the modification would fundamentally alter the nature of the goods or services" (Goldberg, D. & Goldberg, M., 1993, p. 36). Disabilities Support Services personnel are on hand at Gonzaga University to help faculty and students understand and follow the mandates. A handbook for faculty is available that discusses the philosophical issues and practical challenges in educating persons with disabilities. Not all students with disabilities choose to identify themselves and seek services through the Student Disabilities Services center.

We'd like to share the stories of four students in our program who are disabled and with whom we worked in order to ensure their success in our program. (Note: we changed the names in order to protect their privacy.)

Patricia: Patricia was an undergraduate student majoring in special education. She was deaf and aspired to become a teacher for deaf preschool children. Since all our students are required to earn certification in general education in addition to special education, Patricia needed to complete all our general education courses and the two in school placements prior to being placed for student teaching. The university provided interpreters to accompany her to classes, the instructors agreed to meet her needs by sharing audio-visual materials with the interpreters ahead of time, and our director of field experiences made careful arrangements for her in school placements (to which the interpreters accompanied Patricia). This was the first time some of our faculty had worked with interpreters and so there was some adjusting and learning about how to best deliver instruction to meet the needs of all the students in the classroom.

Patricia received accommodations throughout the Application Process and during student teaching. Based on certification requirements, it was necessary for Patricia to student teach in a general education classroom. She was provided an interpreter from the university throughout the application process with two interpreters during student teaching. Particular care was taken in selecting a student teaching site. With help from school district personnel, a school with some experience with deaf and hard of hearing children was identified. In this way, we hoped that faculty would be more open to a person who was deaf. The selected cooperating teacher was one with years of teaching experience, had worked with our student teaching program in the past, and was open to a student teacher who was deaf. Then a university supervisor was selected; one who was also open to the situation, who had a number of years of administrative experience, and familiarity with the district policies and procedures. The university supervisor spent extra time working with the cooperating teacher ensuring the student teaching experience was a positive one and that Patricia could in fact teach. Patricia performed well as a student teacher and was able to overcome any obstacles that came her way. She is now completing her student teaching in special education.

Celia: Celia was a post-baccalaureate student who planned to teach at the elementary level. She was seriously emotionally disturbed and had bi-polar disorder. She did not officially request any accommodations, but we found that we needed to respond to her needs in order for her to be successful in our program. Her challenges arose from her inability to control, or even predict, her moods and energy level and this caused difficulty in her classes on campus and in her field experiences.

Celia was particularly challenged with procedural details as she went through the Application To Student Teach process. It became imperative for her to receive assistive help and support in the paperwork for student teaching. Celia paid particular attention to details as she completed the paperwork. The final product was well done. Celia initially began student teaching in a public school close to Gonzaga University with Celia's choice of grade level. However, her cooperating teacher was not willing to take any extra time with Celia to help her through some instructional hurdles. Although a university supervisor was specifically assigned to Celia, who was caring and empathetic with her and was an excellent liaison between the schools and university, he was not able to convince the cooperating teacher or administration to give Celia a chance. Therefore, her experience was terminated at that school. With individual help from the Director of Student Teaching and counseling from other personnel on campus, Celia was then given a second opportunity to student teach. The second placement took place at a parochial school with a cooperating teacher who was willing to work closely with Celia, giving her very direct feedback about her strengths and what she would need to work on. She had a very structured student teaching experience. The university supervisor also worked closely with Celia. She was able to finish the second experience satisfactorily. Celia was hired for a short period of time at a parochial school in another community but her disability prevented her from continuing in the position.

Scott: Scott was a graduate student in our Masters in Initial Teaching program who planned to teach social studies at the high school level. He was hard of hearing and wore Assistive devices in both ears. He experienced a range of difficulties in our program, in part because he did not officially request any accommodations. Most of his challenges related to poor interpersonal skills which we found to be related to his hearing impairment. He learned to adjust his hearing aids in the different settings and to communicate more clearly with his classmates, instructors, and students.

Scott was given assistance during the Application To Student Teach process by the Director of Student Teaching and other faculty in the Teacher Education program. The Director of Student Teaching met individually with Scott to explain clearly the expectations of him as a student teacher. We discussed appropriate ways to interact with students and with adults, particularly with prospective colleagues. Scott did not need special help with the paperwork. He was well organized and thorough in this area. The university supervisor was selected on the basis of his expert knowledge with the content area, long time experience with student teachers under him, and a recent knowledge of the high school expectations. The university supervisor then worked diligently with cooperating teachers and Scott to help provide Scott with a positive student teaching experience. One cooperating teacher was more understanding of Scott's disability and was willing to work with him. The other cooperating teacher was not. Although there were some bumpy times during the student teaching experience, Scott did complete the experience satisfactorily. Scott actively sought a secondary level social studies teaching position upon graduation but to date has not been hired.

David: David was a graduate student in our Masters in Initial Teaching program who planned to teach science at the secondary level. David was orthopedically impaired and had a spastic condition and balance problems, particularly when he was fatigued. He did not officially request any accommodations, but we found we needed to make adjustments in order to help him be successful in the program.

David was able to complete the paperwork aspect of the Application To Student Teach process without any extra help. David was over anxious during his student teaching experience but with the help of the university supervisor (the same as Scott's), he was able to complete the student teaching experience positively. His disability did not warrant special adaptations but rather understanding from the cooperating teachers and university supervisor that he tired easily. David has learned to cope and manage his physical limitations well. He learned that during student teaching he needed to watch the amount of time he over extended himself toward perfection in his teaching. David was hired on a part-time basis as a science teacher in a large school district in Washington.

With extra care and attention to the individual needs of every student, it is possible to "expand the envelope" - to consider situations that once were considered impossible or unrealistic. Providing a holistic teacher education program that includes several steps along the way to screen and assist students creates an environment for success. Adaptations, accommodations or simply creatively looking at alternative approaches can make a difference in the success or failure of many students. These four students have shown us what is possible - the sky is the limit!

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THE REFLECTION OF CEC STANDARDS INCLUDED IN STUDENT TEACHING HANDBOOKS: A PILOT STUDY

High-quality practicum experiences are an essential part of any effective professional preparation program. It is through practicum experiences that students preparing for future professional roles practice and demonstrate the skills they must have to be effective educators. In an effort to provide consistency to these experiences, professional organizations have developed standards that should be incorporated into the practical experiences for student teachers. The Council for Exceptional Children has developed specific standards for the certification of special educators and the accreditation of those programs which prepare them (CEC, 1996)(See Appendix A) An institution of higher education (IHE) seeking approval for its special education programs must submit the necessary information to CEC for review. In order for an IHE to receive program approval from CEC, these standards must be incorporated into its teacher education program (CEC, 1996).The CEC standards are designed to establish a common set of professional expectations for all preparation programs in the profession. These standards were developed over a six-year period and involved thousands of special educators (CEC.1996). The standards focus on the quality components of a program rather than on a specific model. High quality programs are built on the talents of the faculty, students, and other professionals in the community. The practitioners have the responsibility to teach the continually emerging knowledge derived from research and practice. These requirements provide guidelines that structure the preparation of preservice professionals in this field. Hence, the requirements help to ensure the quality of such programs of preparation (CITE).

Important to the preparation of preservice special educators are practicum experiences in which preservice teachers are given opportunities to be exposed to "model inservice professionals who use practices congruent with the knowledge and skills expected of the student candidate" (CEC, 1996). Of these practicum experiences, it is a common belief that student teaching is the most influential in preservice teacher education (Raidl, 1994).

Whether preservice special educators are being adequately prepared for their roles is an important question. It was the belief of the authors of the present study that an important step in answering this question would be to investigate the nature and quality of student teaching experiences that are being provided preservice special educators by colleges and universities. Because student teaching experiences are structured by the policies and procedures published in student teaching handbooks, the authors concluded that an examination of a sample of such handbooks would provide a way of assessing the quality of these experiences. Therefore, the intent of this study was to determine how closely a small pilot sample of college and university student teaching handbooks for special education concurred with the national standards endorsed by CEC.

Methods

Although the authors of this study received a small grant to conduct the research being reported in this paper, the grand did not bring with it enough money to conduct a large-scale study involving a broad nationwide sample of special education preparation programs. Therefore, the examiners decided to do a pilot study in which the student teaching handbooks of a relatively small sample of teacher preparation programs would be examined. The purpose of this study was to investigate the extent to which CEC standards for the student teaching experiences are incorporated into the student teaching handbooks of teacher preparation programs.

The selection of the IHEs for this study was based on several criteria. To be included, an IHE had to be a public, state-supported institution, its total enrollment of full-time students had to be less than 10.000, and it had to offer special education as a major to students in its preservice teacher education programs. Using Peterson's Guide (19898), a cover letter was sent to 17 institutions explaining the nature of the study and requesting that each institution send a copy of its student teaching handbook. The researchers included a form asking for specific demographic information about the institution's special education program (See Appendix B).

Of the 17 requests, only ten institutions responded and only eight returned a sample of their student teaching handbook. The investigators examined seven of those handbooks because one was written as a graduate level program. The researchers made a follow-up contact both by letter and by phone, but no other institutions responded.

The examiners analyzed each of the seven handbooks for its congruence with the CEC standards for practicum experiences. Three raters independently evaluated each handbook. A five-point Likert scale was used in the evaluation process in which 5 indicated a complete congruence between a CEC standard and a student teaching handbook requirement, while a score of 0 indicated a total absence of congruence between the two. The result was a group consensus for each of the 15 standards on each of the seven handbooks. Following this process, the total number of cumulative quality points awarded for each standard was summed across raters and institutions and from this result a mean score was derived for the handbooks on each standard. The possible mean score for each standard ranged from 0 to 5. To be considered even minimally congruent with a CEC standard, the research team determined that it would be necessary for the handbooks to be awarded a mean score of cumulative quality points of 3 or above on any given standard.

All of the data in this study were derived from a pilot study of a small group of institutions. Each of the institutions involved represented a self-selected population based on a voluntary choice to participate. The overall response rate from the target population was 41%. When considered together, all of these facts represent a selection bias present in this study. The threat to external validity of a study that is posed by such a bias is well documented (Campbell & Stanley, 1963). It is important to be mindful of this limitation of the present study in order to avoid over generalizing its results. It represents a sample of teacher preparation programs across a diverse geographical area (Utah, South Dakota, South Carolina, Nebraska, and Pennsylvania) and it offers some insight into what may be some common and widespread weaknesses regarding the student teaching experiences of preservice special educators. In addition, by pointing the way for further study in this area, its long term results may be that it will lead to significant improvements in the preparation of professional special education personnel.

Results

The investigators who conducted this study carefully selected the institutions in terms of their being public rather than private institutions, in terms of their relative student enrollments, and in terms of the academic programs that they offer to students. Further, the authors required that each be a state-supported institution. Each institution involved in this study enrolls no more than 10,000 full-time students in ins undergraduate programs. Finally, each institution that participated offers special education as a major to students in its preservice teacher education programs. Table 1 provides demographic information on the nature of the special education programs of the institutions involved in this study.

Table 1

IHE	CEC accredited	# of Majors	Graduates	Single major	Double Major	Categorical	Noncategorical	Supervision
1	N0	60	60	NO	YES *El Ed. Sp. Ed*	NO	YES LD, E/BD ID,At Risk	Professors
2	YES	50	15	YES	NO	NO	YES All areas	Professors
3	YES	50	15	NO	YES *El.Ed Sp.Ed*	NO	YES *MR,LD,E/BD*	Professors
4	YES	105	25	YES	NO	NO	YES Mental/Physical	Professors
5	NO	80	20	YES	YES *El.Ed/Sp.Ed* *SEED,Sp.Ed*	YES	YES *MR,LD,BD*	Professors Adjunct Graduate Interns
6	YES	316	70	?	Pending *El.Ed./Sp.Ed*	NO	YES MR,LD SBD,PH	Professors
7	YES	160	25	YES	Optional	NO	YES *MR,LD* *BD,OH*	Professors

The analysis of the student teaching handbooks of the seven teacher preparation programs represented in this study resulted in an overall assessment of the student teaching experiences for special education preservice professionals across these seven programs. Using the context of the CEC standards for student teaching experiences, this cumulative qualitative evaluation revealed that there is relatively little congruence between the student teaching handbooks of these programs and the CEC standards.

The total number of cumulative quality points, summer across raters and schools, that could have been awarded to the handbooks for each CEC standard ranged from 0 to 5. Of the fifteen CEC standards, the handbooks from the seven programs involved in this study were awarded a mean score higher than three on only of (Standard 11: length of the student teaching experience). The handbooks were awarded a mean score higher than two but lower than three on four of the CEC standards (Standard 1: experiences are sequential in difficulty; Standard 4: guidelines are offered to structure field experiences; Standard 10: performance criteria are established for student teaching; and Standard 13: students are supervised under a structured program of advisement). The handbooks were awarded a mean score higher than one but lower than two on five of the CEC standards (Standard 2: clearly stated, measurable objectives; Standard 3: model professionals are involved whose practice is congruent with the expectations of the student teacher; Standard 9: student teachers are observed by a university supervisor at least 5 times; Standard 12: expectations of student teachers reflect recommended practices; and Standard 15: there are written criteria for the selection and retention of cooperating and supervising professionals). On the five remaining CEC standards, the handbooks were awarded a mean score of less than one (Standard 5: student teachers are placed with appropriately licensed cooperating teachers; Standard 8: university supervisors have appropriate education and experience in special education; and Standard 14: special education faculty are responsible for the assignments of student teachers to approved placements). Table 2 provides the results of the assessments made of the student teaching handbooks by the raters in this study.

Table 2

Mean Scores for Each Standard

Standard	Mean
11. Students have a minimum of 10 full-time weeks of supervised student teaching in the areas of specialization for which the candidate is being prepared	3.476
1. Experiences are sequential in difficulty	2.769
10. Explicit performance criteria are established for student teaching and each field experience	2.571
13. Practicum experiences are supervised under a structured program of advisement	2.238
4. Cooperating professionals are provided guidelines that structure field experiences	2.190
2. Each experience has clearly (a) stated objectives, and measurable objectives that relate to the overall goals and objectives of the program	1.810
12. Knowledge and skills required for each practicum experience reflect "recommended practice"	1.714
15. There are written criteria for the selection and retention of cooperating professionals and	1.524
9. During student teaching, the supervisor form the college/university observes the candidate at least 5 times	1.236
3. Experiences involve model professionals who use practices congruent with the knowledge and skills expected of the student candidate	1.000
7. Candidates are placed only with cooperating professionals who are appropriate licensed/certified in the specialization in which the candidates are seeking certification	.952
6. The student teaching experience is with the same type of individuals as those with whom the student candidate is seeking licensure/certification	.429
5. The student teaching experience is in the same setting as that for which the student candidate is seeking licensure/certification	.429
7. Each area of specialization provides supervision to candidates by university/college faculty qualified and experienced in teaching in the area of specialization	.384
14. The special education faculty has responsibility for assigning candidates to approved placements. This responsibility includes the approval of cooperating teachers and supervisors	.143

In addition to the relatively low evaluations made of the student teaching handbooks in relation to their congruence with CEC standards, it was noted that only two of the seven were written specifically for student teaching in special education. The other five handbooks contained no provisions specifically relevant to the needs of preservice special educators. Lastly, while all of the handbooks contained sample forms for the evaluation of he performance of student teachers, only two of those forms were for student teachers in special education. The other five forms omitted various items necessary to evaluate important responsibilities of student teachers in special education.

Discussion

To be considered even minimally congruent with a CEC standard, it was necessary for the handbooks to be awarded a mean score of 3 or above on any given standard. The handbooks were awarded a mean score of cumulative quality points of 3 or above on only Standard 11 (length of student teaching experience). Even though the mean score awarded the handbooks on standard 11 was the highest for all the standards (3.476), this result is itself problematic in relation to the quality of the handbooks. That mean scores are derived from a group of scores, and that this mean score was below the maximum possible score of 5, implies that some of the handbooks did not meet this standard. In fact, two of the handbooks either made no mention of the length of time required for the student teaching experience, or the time was less than 10 full-time weeks of supervised student teaching. Given the importance of time to student learning (Berliner, 1988; Walberg, 1988), and given that handbooks structure the student teaching experience, this finding is cause for some concern regarding the adequacy of preparation programs for special educators.

The handbooks were awarded mean scores of higher than two, but lower than three, on four CEC standards. Such scores are interpreted to mean that there is only a weak congruence between these four standards and the content of the student teaching handbooks. As a group, these four standards deal primarily with the structure of the student teaching experience. In order to support the developmental

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nature of the learning which occurs in this experience, it is important that there be some sequential order of difficulty established within it (Standard 1: X = 2.769). If the student teacher is to achieve the expected outcomes of the experience, then those outcomes must be made explicit for both the student teacher and his or her supervisors (Standard 10: X = 2.571). lastly, in order to maintain the integrity of the student teaching experience, it is necessary to ensure a structured program of advisement throughout the experience (Standard 13 X = 2.338), and the cooperating professionals must be provided with explicit guidelines for their roles and responsibilities (Standard 4 X = 2.190). Without adequate structure, it is difficult for student teaching experiences to achieve their intended outcomes. This weak congruencies found between the content of the handbooks in this study and these CEC standards provide little assurance that the programs involved adequately meet the needs of their students.

On five of the standard, the handbooks were awarded mean scores high than 1, but lower than 2. Such scores are interpreted to meant that there is little or no congruence between these five standards and the content of the student teaching handbooks. These standards deal primarily with the objectives of a student teaching experience, the kinds of professionals involved in student teaching, and the supervision of student teachers. As in Standard 10, if a student teaching experience is going to achieve its intended outcomes, then those outcomes must be stated as clear and measurable objectives (Standard 2: x=1.810), and those objectives must reflect the best "recommended practices" (Standard 12: x=1.714). However, even with appropriated and clearly stated goals, the cooperating professionals involved in supervising student teachers must be model teachers whose practices are congruent with the knowledge and skills expected of the student teacher (Standard 3: x=1,000). Furthermore, in order to ensure the necessary match between objectives and professionals, there should also be specific and written criteria for the selection and retention of cooperating professionals in a student teacher program (Standard 15: x=1.524). Lastly, in order to support the work of cooperating teachers, university/college supervisors need to observe student teachers in their sites at least five times during the student teaching experience. Even if student teaching experiences have adequate structure, without excellent cooperating professionals, without clearly identified goals, without a match between the practices of cooperating teachers and program goals, and without adequate university/college supervision, the student teaching experience may equate to little more than a final institutional "rubber stamp" of approval. That little or no congruence was found between these five CEC standards and the contents of the handbooks in this study implies that there may be a good deal of confusion among the cooperating teachers, the university/college faculty, and the preservice students in these programs as to what the meaning ad purpose of student teaching might be. Such confusion works to compromise the quality of the resulting student outcomes.

Mean scores of above 0 but below 1, were awarded to the handbooks in this study on five of the CEC standards. Such scores are interpreted to mean that there is nearly a total absence of any content in the handbooks that might relate to the given standard. This group of standard deals primarily with the qualification of the professionals involved in student teaching experiences, the quality of student teaching placement sites, and the way in which student teachers are placed in sites. In order to ensure that student teachers receive adequate guidance and support, it is important that cooperating teachers be appropriately licensed and certified in special education (Standard 7: x=.952) and that university/college supervisors also be qualified and experienced in special education (Standard 8: x=.381). In some geographical areas and in some university/college programs it may be very difficult to provide appropriately qualified professionals to supervise the student teaching experience. However, failure to provide such professionals works to weaken the efficacy of the student teaching experience. If the transfer value of the knowledge and skills acquired in student teaching is to be maximized then the student teaching experience must be in the same type of setting as that for which the student teacher is seeking licensure (Standard 5: m=.1429)). Such an assignment of professional responsibility to special education faculty works to ensure that the student teaching experience conforms to Standards 5 and 6. That there was nearly a total absence of any content in the handbooks that might relate to this group of five standards, is a critical weakness in each of the handbooks. Absent procedures to ensure the assignment of special

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education students to appropriate sties and to ensure the involvement of appropriate professionals, it becomes very difficult for preparation programs to create and maintain high quality student teaching experiences.

With that changes that have been sweeping through special education, and with the emergence of new standards for special educators within their own professional association, the roles of special educators are changing (CEC, 1996; Stainback, & Stainback, 1992). With the growing trend toward including more and more students with disabilities in the general education setting, the ability of special educators and general classroom educators to collaborate and cooperate with each other in a team approach have become skills important to the success of all educators (Fischette, Maloy, & Heffley, 1989; Gable, 1993; Wigle & Wilcox, 1996). These developments place ever more demands upon teacher preparation programs to make sure that their graduates can meet the new expectations which they will face as special educators in K-12 school.

Given the importance of the student teaching experience in the preparation of preservice special educators, this experience must be structured very carefully (Williams, 1997). The student teaching handbook, used by the student teacher and the K-12 cooperating teacher, provides the structure for this capstone experience (French, 1991). Because of the importance of this experience to the overall development of preservice professionals, it must be of such quality as that indicated by CEC standards. As demonstrated by the results of this study, when the student teaching handbook does not provide adequate structure for the student teaching experience, the quality of that experience may very well be impacted in a significantly negative manner.

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Appendix A

CEC Standards for Clinical Experiences

1. Experiences are sequential in difficulty.
2. Each experience has clearly (A) stated objects, (B) measurable objectives that relate to the overall goals and objectives of the program.
3. Experiences involve model professionals who use practices congruent with the knowledge and skills expected of the student candidate.
4. Cooperating professionals are provided guidelines that structure filed experiences.
5. The student teaching experience is in the same type of settings as that for which the student candidate is seeking licensure/certification.
6. The student teaching experience is with the same type of individuals as those with whom the candidate is preparing to work.
7. Candidates are placed only with cooperating professionals who are appropriately licensed/certified in the specialization in which candidates are seeking certification.
8. Each area of specialization provides supervision to candidates by university/college faculty qualified and experienced in teaching in the area of specialization.
9. During student teaching, the supervisor from the university/college observes the candidate at least five (5) times.
10. Explicit performance criteria are established for student teaching and each filed experience.
11. Students have a minimum of 10 full-time weeks of supervised students teaching in the areas of specialization for which the candidate is being prepared.
12. Knowledge and skills required for each practicum experience reflect "recommended practices."
13. Practicum experiences are supervised under a structured program of advisement.
14. The special education faculty has responsibility for assigning candidates to approved placement. This responsibility includes the approval of cooperating teachers and supervisors.
15. There are written criteria for the selection and retention of cooperating professionals and supervisors.

Appendix B

Demographic Information---Special Education Program

Is your undergraduate special education program CEC accredited? _____ Yes ______No

How many undergraduate special education majors, on average, does your school have per year? ___________________.

How many undergraduate special education majors, on average, does your school graduate each year? ___________________.

Place a "x" on the correct line:

Does your school offer a ______single major, or a ______double major? If the problem is a double major, what are the combinations?

________________________ ________________________

________________________ ________________________

Is your special education program categorical? ______Yes ______No

If your special education program is categorical, please identify the categories included:

________________________ ________________________

________________________ ________________________

Is your program noncategorical? ______Yes ______No

If your special education program is noncategorical, please identify the types of disabilities this certification includes:

________________________ ________________________

________________________ ________________________

Who supervises the student teaching experiences in special education for your institution?

______ Professors in the program

______ Graduate interns

______ Adjunct staff

______ Others (Describe)

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"GROWING YOUR OWN: A NEW MODEL IN PRESERVICE EDUCATION FOR RURAL HAWAII"

In 1998, the School of Education at Gonzaga University was approached by staff of the Hawaii Department of Education (DOE) and invited to submit a proposal to offer the Master of Initial Teaching (MIT) degree in the state of Hawaii. The degree, consistent with post modern professional educational practice, would include embedded competencies which would meet the general state standards for educating learning disabled students. It was proposed that the program begin in the summer of 1998, with the candidates being able to complete licensure by the summer of 2000.

The program was designed to assist the Hawaii DOE face a shortage of public school teachers. They expect they will need about 400 new special education teachers in each of the next three years. "There are 21,000 special-needs students among the state's 187,395 students" (Arakawa, 1999). Over 50% of the current special education teaching positions are held by teachers who are not licensed in special education (working under emergency credentials) and a new state law says they cannot be rehired. In addition to this, the state experiences an approximately 50% attrition rate in each two-year period (Arakawa, 1999). Another complicating factor is the decision in a recent federal class action suit (brought by Jennifer Felix) which calls for the state to provide increased mental health services for disabled students by June 2000.

The program we designed to help meet these needs followed admissions requirements and program standards comparable to our MIT on our main campus. The difference was that the coursework for the teachers in our cohort group in Hawaii recognized the fact that they were already teaching and made adjustments to the requirements for fieldwork.

The cohort group includes seventeen students, twelve male and six female students. All but three are of minority background -- Somoan, Hawaiian, Japanese, and African-American. Most of the students were born and raised on the island of Oahu, many in the community of Wai'anae. Although the students all possess undergraduate degrees and some with master's degrees, none are endorsed in special education. Twelve of the students teach at Wai'anae High School. Two students teach at Nanakuli High School about eight miles from Wai'anae, one teaches at Kamaile Elementary School in Wai'anae, and two are currently not employed at a school. The students who are currently teaching either teach in a self-contained special education classroom or teach special education students in a subject area half-time while the other half of the day is spent writing IEP's, conferencing, or consulting with general educators. Most of these students recently began their teaching careers and would like to continue teaching in the Wai'anae community.

The community of Wai'anae is located about 30 miles from Honolulu. Many of the community people have never left Wai'anae. Public assistance is high in the area. According to one student, approximately 40% of the prison population either come to or reside in Wai'anae. There is a high teen pregnancy rate as well as drug and alcohol problems. Wai'anae is comprised of people from diverse ethnic backgrounds, primarily Hawaiian and part Hawaiian. Other groups represented are Samoan, Filipino, Chinese, Japanese, Portuguese, African-American, and Caucasian. There is a lot of pride and spirit in the community.

Wai'anae High School is the single largest employer on the Wai'anae coast. The school has been the center of the community since 1958. The school's population is close to 2000 students with over 400 identified as special education. The school employs more than 100 teachers of which 38 are special education teachers. At this time, only 10 of the 38 teachers are certified to teach. This is of particular concern to the principal as well as the Department of Education in Hawaii. It is difficult to keep good teachers at the school and even more difficult to fill special education positions. By next year, the school anticipates 25% of its student population to qualify for special education.

The Hawaii DOE is supportive of Gonzaga University's MIT program and is very anxious to see the students become certified special educators. In addition, the Wai'anae High School principal is particularly pleased to have a program on site in which these teachers can become certified. The principal is interested in training and keeping teachers who live locally and are committed to the community of Wai'anae. The principal has been impressed by the caliber of training the cohort group has gained from the program.

The cycle of courses and course delivery system was designed especially for this cohort group. We recognized that the majority of students were working on a year-round school calendar and were available for our classes after school and on weekends. We agreed to hold classes at the high school in which most of them are employed, but also accepted students who were teaching at other school sites. Here is the cycle of courses we developed (note: * indicates courses in which we made considerable adjustments to meet the specific needs of these students):

Summer 1998

EDTE 500	Cultural Foundations of Education (3 credits)

Fall 1998

EDTE 510*	Learning and Human Development with field experience (3 credits)
EDTE 620	Planning, Strategies, and Assessment of Instruction (3 credits)

Spring 1999

EDTE 518	Reading and Writing Across the Curriculum (3 credits)
EDTE 594*	Special Project: Educational Practices: Reaching All Learners (3 credits)

Summer 1999

EDSE 576	Consultation in the Classroom (3 credits)
EDSE 604	Assessment of Special Needs Students (3 credits)
EDSE 694*	Special Project: Hyperactivity and Social/Emotional Disturbances (2 credits)
EDSE 694*	Special Project: Teaching the Learning Disabled (2 credits)
EDTE 554*	Discipline-Specific Methods (3 credits)

Fall 1999

EDTE 560*	Effective Classroom Management (3 credits)
EDTE 640	Instructional Technology (3 credits)
EDTE 696*	Student Teaching (6 credits)

Spring 2000

EDTE 630	Educational Research Methods (3 credits)
EDTE 690	Field Research (2 credits)

Summer 2000

EDTE 689	Professional Seminar (1 credits)
EDTE 699	Thesis Presentation (0 credits)

We used full-time faculty to teach the courses and they flew to Honolulu, usually on a Wednesday, commuted from Honolulu (1.5 hours each way) to teach Thursday and Friday after school hours, and returned to Spokane on Saturday. Each 3 credit class met for 32 contact hours. This meant the faculty were not available to teach or advise on the main campus for one week each month and that they communicated with their students in Hawaii by email, fax, regular mail, and telephone in the intervals between each trip.

Nearly all of the cohort group have been teaching in a special education setting for one or two years. Therefore, we developed a course to specifically meet their needs and still cover basic content of an introductory special education course. The EDTE 594 Special Projects: Educational Practices -- Reaching All Learners course was created. The course was designed to provide the students with basic knowledge and skills in meeting the learning needs of all students within a general education classroom. Included in the course was an overview describing special populations (ESL/bilingual students, migrant students, highly capable students, at-risk students, students with Section 504 plans, and special education students) as well as those students who just are not academically succeeding in the general education program. The primary focus of the course was to explore various strategies for meeting the needs of all learners in the general education classroom. The course centers on the belief of an inclusive environment, learning ways to accommodate and adjust a classroom program to meet individual student needs.

Since the course was designed to highlight introductory special education content only, it was important to determine how much of this information the students already knew. A pre-assessment of their knowledge base was given at the first class covering the basic concepts to be taught. From this information, adjustments were made to the delivery and instruction of content in the course. A post-assessment will be given at the end of the course. Assignments given in the course revolved around actual case studies of high school students creating a profile and developing a plan for accommodating the student in a general education classroom. The format of the class is varied with considerable active participation on the part of the students. Every attempt was made to accommodate the learning styles of the students in the cohort group, modeling techniques for accommodation and adaptation.

We have much left to arrange for this group of students. We are currently working with the Hawaii DOE and the local high school principal to determine appropriate student teaching placements for these students. We have yet to identify student teaching supervisors and faculty for the remaining coursework. We will be conducting a mid-program assessment this spring; our formative assessments show a high level of satisfaction with the program thus far. We must also decide if we would like to begin a second cohort of students, perhaps on one of the other islands, and must work out staffing arrangements if we decide to proceed.

This has been an exciting and challenging adventure. The faculty report they have really enjoyed their interactions with their students and with the youth who attend Wai'anae High School. We have all been thrust into a different culture and have had an intimate experience with the joys and challenges of working in a large, rural high school. We have had to learn quickly the rules and regulations used by the Hawaii Department of Education and to adjust and readjust our program and plans in order to meet the needs of our students so that they could be effective with the special needs students of Hawaii.

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RURAL GENERAL EDUCATORS AND SPECIAL EDUCATION TRAINING: APPLIED ASSIGNMENTS & PROGRAM EVALUATION DATA

Introduction

It is imperative that general education teachers be prepared to facilitate and provide appropriate instruction for students with learning disabilities in inclusive school settings. The Individuals with Disabilities Education Act Amendments of 1997 stipulate that students be removed from general education programs only when the nature or severity of their disability is such that education in general education classrooms, even with the use of supplementary services, cannot be achieved satisfactorily. More than 80% of the over 5.6 million 6-21 year old children and youth currently identified as having disabilities in the United States are being taught in general education settings. Some 41 % of these spend their entire school day in general education classes; another 39.6% are enrolled in these settings on a part-time basis (U.S. Department of Education, 1997). The percentage of children with disabilities attending general education classes has increased every year since the inception of The Education of All Handicapped Children Act (PL 94-142) in 1975, and by all indications, this trend will continue.

IDEA Amendments (1997) specify that effective and efficient training models be developed that prepare general education personnel to acquire the collaboration skills necessary to work within teams to assist children with disabilities, and to achieve results that meet standards within the general education curriculum. A workable model provides a comprehensive, organized way to develop and maintain an integrated, caring, and inclusive school community. An "inclusive school" is one in which all children with disabilities: 1) attend the neighborhood school they would attend if they had no identified disabilities, 2) the percentage of students with disabilities in a given classroom does not exceed the proportion of those students in the general population (principal of natural proportions), and 3) all supportive services, which would be available to the student in a special education placement, will be available in the general classroom. Research regarding collaborative skills indicates educators engaging in collaborative processes are likely to benefit from a host of skills clustered in several areas that include communication, inter-personal problem-solving, instructional strategies, assessment knowledge and techniques, providing accommodations and modifications for curriculum access.

Although inclusion calls for a "shared ownership" approach to educational problems of students with identified needs through a partnership between general and special education, it makes increasing demands on general educators to assume responsibility for the learning of students with disabilities and students at risk. It requires an effective support system, which may not be in place in many educational settings. For special educators, inclusion requires skills in effectively interacting with other professionals and sharing responsibility for students once considered "theirs." For general educators, it requires active participation in developing and implementing programs for students with disabilities and an increased willingness to open their traditionally private classrooms to special educators. Inclusion, therefore, creates a need for communication, coordination and collaboration among a total school staff that has access to materials and methods to enable them to implement responsible inclusion. Professional skills to promote the development of mutual respect and support, for establishing a collaborative and sharing atmosphere, and facilitating a team approach to instruction and planning have been identified as professional development needs.

Provisions for an appropriate education for children with disabilities in the least restrictive environment continues to challenge rural schools. In West Virginia, approximately 90% of students with disabilities are placed either full-time or part-time in general education. These data suggest that ways must be explored to serve students with disabilities more effectively and efficiently through shared problem ownership, collaborative consultation, and teaming. State Policy 2419, Regulations for the Education of Exceptional Students (WV Department of Special Education, 1995) state that a full-time general education placement for children with disabilities requiring classroom modification be implemented through consultative services between general and special education personnel. Many schools are trying to adopt a collaborative consultation model to facilitate inclusion but report they have no faculty trained in the process nor having knowledge of how to plan and implement inclusive practices school-wide.

LD Inclusion Training Program

IDEA Amendments of 1997 prioritize personnel preparation for interdisciplinary teaming with parents, students, agency representatives, and key community persons to ensure smooth transitions for students with disabilities 20 USC 1474(b)(3)(A). Interdisciplinary coordination requires skills that include assessment of students needs for community services and transition supports, and developing a sequential action plan for services delivery by multiple agencies and key community persons. IDEA prioritizes the need for educating general education personnel to meet the needs of children with disabilities. This training program prepared rural general education teachers to serve students with LD. The program delivered coursework using an immediate theory to practice approach. A distributed practicum directly in the general educators' rural inclusive classroom included technical assistance while modeling immediate instructional problem solving. Emphasis was placed on specific preparation in instructional strategies and behavioral interventions.

One of the tasks outlined in IDEA Amendments of 1997 is to develop national guidelines for alternative assessment for those children who are determined not to be able to participate in or benefit from general assessment procedures 20 USC 1474(b)(3)(A). Conceptual and structural analysis of different modes of assessment such as curriculum-based, out-come-based, functional, dynamic, ecological assessment, and socio-behavioral assessment were targeted in four modified core required courses. In addition, uses of various modes of assessment were incorporated in three newly developed inclusion modules. Students were required to refine assessment procedures and techniques in course assignments based on the performance of individual students with learning disabilities included in their classes. Improving the assessment knowledge and skills of general educators was anticipated to have a direct effect on the problems related to identification of children as having learning disabilities.

Inservice training has been the primary method used to train special and general educators for inclusion in West Virginia. Unfortunately, the goals of inservice training sessions typically are directed toward awareness and knowledge (Dettmer, Thurston & Dyck, 1993). The LD/Inclusion program provide instruction directed at developing skills/competencies to effectively and appropriately integrate students with learning disabilities in general education settings. A variety of methods and materials were employed to facilitate the development of competencies of trainees. The program applied the principles of competency-based personnel preparation which allows for individualization to meet specific needs of trainees and their teaching environment (Blackhurst, 1977). Competency-based learning helps focus learning and thus results in better retention and application of the skills (Kulic, Kulic and Bangert-Drowns, 1988). Case studies were used to bridge the gap between the "what to do" and "how to do" of inclusion practices. This provided teachers a process and opportunity to refine and practice skills to analyze situations and make judgments (Shulman, 1992; Silverman, Welty & Lyon, 1992). Applied assignments combined academic knowledge and skills that enable trainees to learn by doing (McKeachie, 1994). Two forms of field-based instruction were used: 1) coursework combined with on-the-job application, and 2) practicurn assignments in which field experiences are incorporated into Module lectures and discussions.

The participants completed a certification program of 24 hours that included 12 hours of special education core courses (Introduction to Special Education; Curriculum and Methods for Special Education; Assessment; and Classroom and Behavior Management) and six (6) hours of specialized courses including an introductory course addressing characteristics of students with Learning Disabilities, a strategies course, and a modified, innovative six (6) hour on-the-job practicum experience. This program was anchored to a common thread of competencies focusing on inclusive practices necessary for successful integration of special education.

The participants also completed a series of three Inclusive Schooling Modules and a Leadership for Planning Rural School Inclusion course. Competencies for the modules were derived from an extensive review of literature of best practice indicators for inclusion. Module I (Inclusive Schooling Issues and School Teams) examined practical, ethical and theoretical issues related to inclusion and the principle of least restrictive placement of students with disabilities. Module II (Assessment and Teaching Strategies for Use in Integrated Classrooms) targeted competencies related to teaching students in general education classes and activities involved developing, implementing and evaluating educational and environmental adaptations to meet the varied needs of these students and others, which may be considered educationally, at-risk. While traditional methods courses in special education focus on strategies for teaching special education students in more restricted, small group formats, this module targeted their application within the context of the varied population and large group format of general education classes and activities. Module III (Inclusive Schooling Models and the Change Process) examined a variety of inclusion models to facilitate integrated/inclusive practices. Module III primary objectives were to make use of workable ideas already developed and to study change agents involved, including their success or lack thereof. The three Modules were delivered to trainees in sequential order and simultaneously with certification coursework.

Trainees

A total of twenty teachers began the training program with sixteen successfully completing all requirements. Trainees were from schools within the state of West Virginia, Maryland, and Pennsylvania. All participants were employed general educators in rural schools districts. At least three identified students with learning disabilities were on the class roster of every teacher. The eleven of sixteen trainees completed and returned the Comfort Level Rating Scale and the Assessment of Skills for Teachers instruments. The eleven teachers ranged in age from 24 to 54 with a mean of 41.8 years. Years teaching ranged from 1 to 31 with a mean of 11.4 years. Seven participants taught at the elementary level (grades 1-4), five at the middle school level (grades 5-8) and two at the secondary level (both grade 12). Six of the eleven participants completed and returned the Program Evaluation Questionnaire.

Data Collection

Data on competency acquisition and use were collected from participants prior to participation in the program, and then six months following program completion. Instruments used included a Comfort Level Rating Scale, an Assessment of Skills for Teachers, and a Program Evaluation Questionnaire developed by project staff. The questions focused on what impact the program had on the participants' teaching, and ultimately on the special education students in their classrooms. Participants were also asked to cite specific components of the program they felt had the greatest impact on their professional development. Finally, participants were asked to provide examples and evidence that supports the stated impact(s).

Preliminary Findings

The preliminary findings from a sample of participants for which complete data are currently available are reported in this document. At the time of this writing, eleven of sixteen participants returned the Comfort Level Rating Scale and the Assessment of Skills for Teachers instruments. Six of sixteen participants returned the Program Evaluation Questionnaire. A comparison of pre and post program participation scores on the Comfort Level Rating Scale and the Assessment of Skills for Teachers instruments is summarized below. Pre and post scores on the Comfort Level Rating Scale and the Assessment of Skills for Teachers instruments were analyzed by computing paired t-tests. Preliminary findings based on the responses to the Program Evaluation Questionnaire are discussed as well.

Comfort Level Rating Scale

The Comfort Level Rating Scale is a 6 point likert scale instrument. Participants self-rated their comfort level in the use of seven instructional and behavioral techniques (curriculum based assessment; cooperative learning; student self-management; class wide peer tutoring; strategy instruction; direct instruction; and goal setting for students with LD). There were statistically significant gains ($p<.01$) in the rating scale score for six of the seven techniques listed on the Comfort Level Rating Scale. The six techniques for which there were statistically significant gains ($p<.01$) are curriculum-based assessment, cooperative learning, student self-management, class wide peer tutoring, direct instruction, and goal setting for students with LD.

Assessment of Skills for Teachers

The Assessment of Skills for Teachers is a 5 point likert instrument that lists seven skills related to teaching students with disabilities. Participants self-rated the degree to which they could demonstrate each specific skill listed. The instrument asked if the participants the degree to which they could: 1) establish positive motivational strategies that can be used with students with varying learning styles; 2) analyze materials according to appropriateness for student with learning disability; 3) develop lesson plans to assist student with learning disability; 4) develop a schedule that allows teacher to work effectively with the variety or students in classroom; 5) respond appropriately to learning needs of students from different cultures and backgrounds; 6) develop intervention plans for deviant behaviors; and 7) identify specific teaching materials to meet the needs of students with learning disabilities. There were statistically significant gains ($p<.01$) in the rating scale score for all the items listed on the Assessment of Skills for Teachers, except on the 'develop a schedule to that allows teacher to work effectively with the variety of students in classroom' item.

Program Evaluation Questionnaire

Responses on the Program Evaluation Questionnaire indicate the training impacted unit and lesson planning with regards to inclusion students with learning disabilities. The immediate benefit for students was evident. As one teacher put it, "I can see that modifying does make a difference because the students grades have improved overall. Lesson plans and units include modifications. Previously they usually weren't very detailed."

Changes in behavior management approaches and student gains were also a common theme on the Program Evaluation Questionnaire. Many very specific testimonials were provided. One teacher offered the following: "By simply using positive reinforcement I was able to see an LD student in my class improve from an 'F' in math to a '**C.**' I praised and encouraged her constantly and her whole attitude towards math changed. The class that she hated at the beginning of the year became her favorite subject at the end."

The most cited instructional methods impact was in the area of cooperative learning and peer tutoring. Every teacher indicated an increase use of cooperative arrangements. Every teacher reported student gains in learning and/or behavior as a direct result of implementing various cooperative/peer techniques. A middle school teacher summed it up this way: "In a class which was very uncooperative, I decided to try to use cooperative learning groups. Although the planning was ridiculous, the class responded really well."

Assessment and evaluation methods to evaluate student learning were greatly impacted for all teacher participants. "I never felt comfortable modifying assignments and tests until taking these classes. Several things like modifying test instructions, reading tests aloud, highlighting material, and giving oral tests have all been very helpful..." is a common theme reported by the teachers. The use of advanced organizers was the most cited impact in the area of curriculum and material modifications. There was only a marginal impact in the area of learning strategies. Most teachers felt the program validated the learning strategies instructional practices they were already implementing.

Finally, participants were asked to identify the components or aspects of the LD/Inclusion Program that were most valuable. The Curriculum and Methods for Special Education, Classroom and Behavior Management, and the Inclusion Modules were cited as most beneficial. The teachers also appreciated the Cohort structure. "Being part of a great group of people was helpful. We bonded and helped each other. Many of us (I for one) probably couldn't have done it without that support."

Summary

The LD/Inclusion training program increased the knowledge and skills of general education teachers in several domains. Participants improved skills and competencies needed to facilitate and implement responsible inclusive schooling practices in rural settings. The most influential components/coursework within the program had field based assignments that teachers carried out in their respective schools. Ultimately, academic and social benefits were realized for students with learning disabilities as well as their non-disabled peers.

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DEVELOPING A MULTIGENERATIONAL CREATIVITY WEBSITE FOR GIFTED AND TALENTED LEARNERS

Teaching to facilitate creativity, allowing creative growth, or facilitating the natural creative spirit within each learner are phrases that could be used to state the purpose for developing a website for all ages in rural areas. Creativity development is a topic that has received considerable teaching and research attention over the past few decades. Many researchers comfortably assert that creative behaviors are indeed enhanced through creative instruction (seeTorrance, 1987; Treffinger, 1993; Van Gundy, 1987; http://www.creativelearning.com/bibliography.htm)

There is less agreement in the research for the most appropriate type of instruction, the sequence for the instruction, or the essential steps to include in instruction for creative development. Luckily, none of these problems are issues for developing a website as the choices are left to the individual learner. The purpose of this paper is to briefly describe and present several of the creative instructional techniques commonly used to stimulate creativity in Computer Mediated Learning (CML). Specifically, ways of promoting creativity are connected with addresses to use in developing a your website that can be used by several generations of learners (see http://www.profitplay.com/creativity.html or http://planetx.bloom.edu/~pbl/create.htm.

Categories of Development

To organize the website, there are two very broad categories that seem to be the most appropriate for understanding development issues. One of the categories is person variables which is thought to be intrinsic, stable traits, perhaps only modifiable in the long term. For characteristics of the gifted-creative see http://members.aol.com/douglaseby/Page5.html. The person variables are shown in Table 1.

The other broad category of components for creativity development contains process variables, including thinking skills, specific learning processes, and those person characteristics that are responsive to development. For a definition of terms see http://www.buffalostate.edu/~cbir/cbirdefs.htm. Following are descriptors for this category..

Techniques for Development

There are several sources available for investigating the breadth of teaching techniques used to increase creativity with learners living in rural areas. One study used a content analysis of college creativity course syllabi to identify ninety-five various instructional components (Montgomery, Bull & Baloche, 1993). The results represent a vast range of disciplines, including education, business and management, engineering, performing and visual arts, and general studies from all regions of the United States. Starting with this list to build your webste assumes that learners of all ages would benefit from similar techniques.

Creative Thinking Skill Development

Higher Level Thinking: The major advantage to using a common cognitive taxonomy to encourage higher level thinking processes as a component to creative thought is that teachers are usually very familiar with Bloom's taxonomy, see http://mailer.fsu.edu/~jflake/bloom.html . Bloom et al. (1956) originally hypothesized that knowledge could be categorized into stages according to the level of complexity and difficulty, from simplest to more complex. The categorization contains six levels of skill: knowledge, comprehension, application, analysis, synthesis, and evaluation. The higher level thinking skills of analysis, synthesis, and evaluation are often integrated into models of creative problem solving, although the descriptive terms may be different. Analysis refers to breaking things down into component parts. Analysis processes are particularly useful in problem defining (http://www2.gasou.edu/geol/2.2SMDP.html), problem finding, or in problem solving (http://www2.hawaii.edu/suremath/home.html) where parts of the problem may have known answers. Synthesis is the bringing together of elements not previously associated to form a unique whole, the essence of creativity. Evaluation, or the valuing of outcome, is the skill to determine or value a potential solution or ideal.

> **Analysis:** The process of analysis is a method of studying the nature or essence of a problem or thing in order to clearly determine its fundamental features or characteristics. In the work of creativity, analysis is used in the problem finding, problem defining, or the preparation stages. See http://devel.ideationtriz.com/inventiv.htm or http://www.stemnet.nf.ca/DeptEd/intermediate/production/04design/04possible/design_con04.htm .
>
> **Synthesis:** This cognitive skill is the process of putting things, ideas, events together to form a pattern, result, object, or other product unique to the individual. Considered the essence of the creative process, ideas broken down at the analysis level are rearranged to form unique new entities as a complete or whole solution at the synthesis level. The forms of creative association, accommodation, and relations are subsumed under the synthesis process. See http://wwwnhc.nhmccd.edu/public/clh/engl/james/teacher/encourage/encourag.html .
>
> **Evaluation:** This cognitive skill involves the process of determining the value, appropriateness, or ethics of a given product or process. The resulting product, thought, or process is compared to internal, external, or self generated criteria. Evaluation in creativity deals with all aspects of product/idea development which follow insight or the selection of the solution to be given a trial. Depending on the teaching model this may involve solution optimization, construction, verification, acceptance, funding and sales. See http://www.netins.net/showcase/fwr/blbehior.htm.

Advanced Thinking: Developing thinking skills of various types become necessary but not sufficient conditions for the development of creative solutions to posed and developed problems. Thinking skills to develop to one extent or another include: critical thinking, deductive thinking, divergent thinking, inductive thinking, lateral thinking (CoRT) http://www.edwdebono.aust.com/debono/cort16.htm , metacognitive skills, visual thinking, and vertical thinking.

Critical Thinking: See http://www.vetl.uh.edu/sefh/writing/critic5.html , http://darkwing.uoregon.edu/~tep/library/crit_think.html , http://www.sonoma.edu/CTHINK/K12/k12library/library.nclk , etc. An open minded, logical, non-emotional, questioning, searching, truth conditional, approach to thinking which includes multiple meaning analysis, reasoning, and argument reduction. The focus is on what is probable and what is improbable. The critical thinker looks for valid evidence and reaches sound conclusions. Critical thinking involves skills in observation, inference (inductive and deductive), valuing, clarification and strategies (Heuristic and Stochastic). Check the website http://pcrest.com/cognitive.html for a descripton of the components of critical thinking.

Deductive Thinking: A process in thinking based on inference from an accepted principle, the process of going from the general to the specific. In creativity deductive thinking is useful in new product development and in the development of specific applications of a new idea or product. See links at http://www.waterw.com/~lucia/awlinks.html

Divergent Thinking: The process of thinking in ways which generate problem solutions which are appropriate for a given problem, but which are statistically pure. Typically tests measure statistical rarity, fluency, flexibility and (in Torrance Tests) elaboration. Those who are divergent maintain contact with primary process thinking, according to Dudek and Veneault (1989). Divergent thinking involves affective as well as cognitive skills. Divergent thinking focuses on the qualitative, affective aspects of ideation, the ability to define and find problems and on the ability to evaluate those problems (Runco, 1993). See http://syllabus.syr.edu/FND/MRSTEWAR/2DMANUAL/page5.html or http://irc.mcmaster.ca/irc/papers/wp30.htm

Inductive Thinking: Inductive thinking is the process of forming general principles from specifically observed cases; going from the specific to the general. In creating this means seeing a single event, process, example and generalizing to a whole class of events

Lateral Thinking: (http://einstein.et.tudelft.nl/~arlet/puzzles/) Lateral thinking is purposeful, sequential and designed to be inherently useful in the outcome. Lateral thinking was developed by Edward DeBono and is described in his books, *Lateral Thinking* (1970), *Six Thinking Hats* (1986), and *Serious Creativity* (1992). Specific techniques, such as the use of strategies, filaments or movement are used to create new ideas. See links from the author's page at http://www.ozemail.com/~caveman/Creative/Authors/ABono.htm and at http://www.edwdebono.com/.

Metacognitive Skills: Metacognition is the awareness of thought processes as thinking tasks are performed. It involves using this awareness to control and regulate the process of thought. Success with metacognition includes a commitment to use the process in addition to the knowledge of how to employ the skill. Processes critical to creativity are organizational, hierarchical, relational, and not the rote processes usually taught under metacognition, see http://www3.sympatico.ca/lgrightmire/META.HTM or http://snow.utoronto.ca/Learn2/visnconc.htm .

Vertical Thinking: This process is like digging the source hole deeper. The process of moving back and forth in a hierarchy from lower level to higher level concepts. Vertical thinking is selective and analytical. See http://www.post1.com/home/intuet/stone.htm .

Techniques For Getting Ready

Creating Context: The immediate context is important for the creation of some kinds of small "c" creativity (Csikszentmihalyi, 1997). Techniques thatwill help establish an appropriate environment include: set breaking, warm ups, blockbusting processes (including both psychological and perceptual blockbusting), constructive discontent, creative dramatics, relaxation training, autogenics, psychodrama, sociodrama, and future studies. Each is reviewed in relation to creativity.

Set Breaking: This is the process of getting out of the conventional mode by presenting problems or activities which require the participants to shift their thinking from one strategy to another or to create a new strategy to solve the problem, e.g., the solution shift in the Luchin's water jar problems. Set breakers can be word problems such as wordles e.g., for boxer or other game like activities which cause learners to shift perceptions or solution styles, e.g., Illusions like the Goblet/Two Faces Illusion used in introductory psychology texts. See exercises at http://www.mindbloom.com/techniques.html .

Warm-ups: Warm-ups can be used to begin training sessions on creative processes in which the end product is a list of creative ideas or solutions for a given problem. A variety of activities can be used as warm-ups such as creative dramatic activities, imagination activities, wordles, problem solving set pieces and the like. The activity is designed to have participants view things in new and unique ways and to think about things in different ways or through a different filter. See http://ursus.jun.alaska.edu/archives/grpfac/msg00169.html .

Blockbusting: There are four classes of blocks that reduce or stifle creative production (Interna, External, Environmental, and Problem-Related). Internal Blocks are those related to cognitive or mental skills, (poor imagination); Blocks developed by parents/teachers/ peers (such as, conformity), Blocks related to information acquisition and the development of ideas (e.g., poor study or work habits), Blocks related to motivation, (e.g. lack of persistence); personality blocks to creative thinking and production, Blocks related to emotional insecurity (e.g., fear of making mistakes), and Blocks related to other aspects of personality (e.g. low aspirations) and attitudinal blocks to creative thinking and production (e.g., over-motivated to succeed quickly, no delayed gratification pattern). External blocks relate to teacher rigidity, lack of communicative opportunities, too permissive or authoritarian parents/teachers. Environmental blocks include a coercive, a hostile, competitive or nonsupportive environment. Finally, problem related blocks include lack of preparation, unclear problem definition and so forth, see Simberg (1964). Typically internal blocks are removed through counseling or therapy; external blocks by environmental change. Problem related blocks are reduced by training or creative problem solving. See GNATS (General Natural Actions (Activities or Attitudes) that Threaten and Stop or Stifle Creativity) at http://www.routing.se/av...e.htm#Aunt Polly's Fence, http://www.apa.org/monitor/aug95/limita.html . See book on blockbusting at http://www.ozemail.com/~caveman/Creative/Books/B13159.htm .

Constructive Discontent: Discontent is the beginning of the process of finding ways to improve. If you stub your toe on something, you are likely to move it or pick it up. Constructive discontent is looking for things that might stub your toe, without sacrificing toes. Constructive discontent is not griping; it is proposing ways to make things better. See http://home.okstate.edu/homepages.nsf/toc/isdhome.

Creative Dramatics: Creative Dramatics is an experience where students perform activities to illustrate their perceptions of ways in which an actual or imaginary act or event could take place (Davis, Helfert, and Shapiro, 1973). Experiences such as dancing in Jell-O, growing like a flower, or being part of a machine which makes people are designed to strengthen imagination, physical control, self-confidence, sensory awareness, and so forth. This experience teaches students new experiences of movement, body control, and reduces inhibition leading to more creative output in dance, theatre or in product oriented tasks. Inhibition reduction can improve curiosity, risk taking and so forth. See http://falcon.jmu.edu/schoollibrary/drama.htm .

Relaxation Training: Relaxation is preparing the mind and body to go beyond the tensions of the everyday and to reach for further potentials. The training tries to get participants into an Alpha State (level of brain wave activity) by sequentially suggesting that muscles and body parts are becoming heavy, limp, and relaxed. See Lee & Pulvino (1978) for example activities. Relaxation training is usually used as a precursor for further mental activity such as the Jungian elevator which leads the participant to ask questions in the relaxed state which deal with the problem under investigation. Being relaxed improves contact with the preconscious and subconscious in the same way as does hypnogogic and hynopompic imagery. See http://www.ing.unibo.it/Associazioni/DIMA/RELAXATION.htm .

Autogenics: Autogenics is a biofeedback process that leads the learner to quiet the emotions, the body and breathing process. It is designed to maintain a theta wave form state across the cortex. See Green and Green (1977). Autogenics in creativity works like relaxation training except it uses a machine to provide feedback. See http://www.autogenic-therapy.org.uk/ or http://www.angelfire.com/ca/hypno97/.

Psychodrama: Psychodrama is a group process designed to get participants to recognize their feelings. We know, for example, that some problem solvers will not use certain classes of decisions because they are seen as personally threatening, e.g., the C.E.O. of a company does not want to know that the best solution for his problem is his own retirement or dismissal. See links at http://www.erols.com/leopold/Psychodrama.htm

Sociodrama: Sociodrama is a group process of role playing which allows members to vicariously experience different alternative situations. The process involves defining the problem, establishing a conflict situation, casting characters, warming up the participants, acting out the situation, cutting the action, discussing and analyzing the results, and further testing or implementation of ideas for new behavior (Dacey, 1989). See http://www.geocities.com/Athens/Acropolis/2060/abstra4-in.htm .

Futuristics/Future Studies: Another technique to establish creative context is the study of the possible/probable alternatives in the future with the idea of solving yet unrecognized problems. Futuristics allows you to prioritize the possible futures so that you can examine many alternatives and determine not only which ones are most likely, but what may need to be done to insure the occurrence (Murdock, 1993). For news groups see http://snow-white.gac.peachnet.edu/learn/newsgroups/future_news.html .

General Creative Systems

There are a number of general systems that purport to develop general creative process, or ones in which creativity is valued or supported. These include: bionics, synectics, future problem solving, creative problem solving, creativity by design, entrepreneuring, and intrapreneuring. Each of these are general systems which have needed steps to produce a creative product. Each of these is described below.

Bionics: Bionics is the search for metaphors and similes in nature to solve problems which are faced by society. For many problems there is an analogous process in nature. Bionics usually proceed through three phases: learning about and describing the biological model, creating a mathematical or logical model from the biological one; and developing the hardware from the mathematical or logical model (The Advanced Technology Staff, 1971). See http://pespmc1.vub.ac.be/ASC/Bionics.html

Synectics: A group process to attack the underlying concept rather than the problem as given is the practice of synectics. By attacking the underlying concept at length, early closure is precluded and radical applications of old techniques may occur (Gordon, 1961). The phases in synectics problem solving are taking the problem as it is presented and making direct, personal, symbolic, and fantasy analogies. Other components include making the strange familiar, interpreting the problem as understood, looking at the operational mechanisms, making the familiar strange, examining psychological states, integrating the psychological states with the problem, developing a viewpoint, and developing a solution or research target. See http://www.ozemail.com/~caveman/Creative/Techniques/synectics.htm for Synectics questions see http://www.ozemail.com/~caveman/Creative/Techniques/syn_quest.htm .

Future Problem Solving: E. Paul Torance designed to Future Problem Solving as a system to give children (grades 4-12) practice in solving hypothetical problems in the future. Problems are provided by a national organization and are submitted for national grading or evaluated locally. See http://www.kaac.com/fpscent.html .

Entrepreneuring: The process of creating new products, markets, values, services, or applications for the market place. This is the process of selling something new that was not previously in existence (Larson, 1993) http://www.theiea.com/ or http://www.town.smiths-falls.on.ca/selfhelp/entre.htm .

Intrapreneuring: Working as an entrepreneur within an organization is a relatively new process developed from the idea of self-directed cost centers which allows those within a business or corporate group to sell their services within and outside of the company to those who need those services. The creative aspects of this process deal with figuring out what you are, to whom you can market yourself (inside and outside the company), and the depth to which you wish to go with the external process. See http://www.imc.org.uk/services/coursewa/bmgt/bm5.htm .

Creative Problem Solving (CPS)

Creative problem solving is a system for finding acceptable solutions to problems. It contains the following process steps: mess finding, data finding, problem finding, idea finding, solution finding, and acceptance finding (Isaksen and Treffinger, 1985). Software for CPS is found at http://www.mindlinker.com:80/cps06.html. Copies of the original *Osborn-Parnes Creative Problem Solving Manual* can be downloaded at http://www.ideastream.com/. http://tile.net/listserv/creacps.html A more detailed model of C.P.S. has been presented by Bull and Montgomery (1990). It includes as trainable components: with two exceptions (openness to the world and insight/illumination), cognitive/affective/skill base, problem finding, problem defining, preparation, idea finding, hypothesis formation, decision-making, symbol review/filter change, elaboration/explication, model building, verification, trademark/patent search, and acceptance finding. This model covers most of the main points in any CPS model (e.g., Wallas, 1926; Parnes, 1972; Davis, 1986 and so forth). For those who would interact with others on CPS there is a listserv which can be contacted at crea-cps-request@nic.surfnet.ni.

Cognitive/Affective/Skill Base: Few people are creative without knowing a lot about the area in which they are creative (Feldhusen, 1993). It is unlikely that you will identify a series of problems in an area in which you are not skilled (Sternberg and Lubart, 1993). A single problem may be identified, but none beyond that. There are a number of general training methods (Mumford, et al., 1993) such as inductive thinking, deductive thinking, critical thinking, abstracting, in conjunction with in-depth reading in a discipline will improve cognitive skill base

Problem Finding: Problem finding is a critical part of creativity according to Einstein and Infeld (1938) who say that "The formation of a problem is often more essential than its solution." (p.92). Learners should be prepared to find and solve problems by setting aside time to read in other disciplines, keeping track of what others are doing that seems original, collecting and filing clippings, notes, and ideas for future reference or keeping a creative notebook of insights, inspirations, and creative ideas to remember ideas. Specific training methods to assist in problem finding include Zwicky boxes (morphological analysis), bisociation, forced relationships, abductive thinking, lateral thinking, attribute listening, homospatial thinking, and Janusian thinking (Bailey, 1979). See http://208.233.92.129/creative.htm , or http://www.delmar.edu/engl/instruct/stomlin/1301int/lessons/content/ruggiero.htm

Problem Defining: Start by stating the problem in a simple, broad, generic way followed by questioning the problem's actual boundaries. Break the problem down into its component parts to see which parts already have solutions. What motives, biases, feelings or prejudices about this problem might interfere with how it is defined. The stage culminates when the problem is specified with the components that need common and creative solutions and the information that is needed to complete the solution (see preparation). For problem defining techniques see http://www.ais.msstate.edu/AEE/8263/pr_plan/tsld012.htm .

Preparation: Preparing to solve problems involves determining what data is needed and what is known about the problem. Seek out all available sources of information. Look at the key factors to which you do not have solutions in the problem and organize the data around them. Symbolization should be simple, concrete, liked, and should promote interrelation of the senses (this may be helpful in incubation). See http://pcrest.com/cognitive.html presents steps of information processing which look very much like preparation in the creativie process

Idea Finding: Ideas start with individuals, they start in a person's mind. What ideas do we already have? Do an idea dump. Self interrogation can start with Osborn's (1963) list of adapt, modify, magnify, unify, substitute, rearrange, reverse, and combine. Value engineering can be used, see http://akao.larc.nasa.gov/dfc/ve.html.

Hypothesis Formation: A hypothesis is a tentative explanation which can be tried out to see if it works. We speculate what is involved with the problem and design a process to collect data to see if the problem can be resolved. Hypotheses are necessary, in many cases, before solutions can be found or evaluated. See http://www2.gasou.edu/geol/2.2SMDP.html.

Decision Making: Deciding is the process of choosing a solution to a problem. Decisions should not be made under stress, the spur of the moment, without consulting others, without trying to anticipate everything, and without worrying about the consequences. According to Kepner and Tregoe (1979), decision making is improved by setting objectives, classifying them in terms of importance, developing alternatives, evaluating the alternatives against the objectives, choosing the best alternative, assessing possible adverse sequence and controlling the effect of the final decision. According to Van Denmark (1991) good decision makers anticipate problems, avoid indecision, and prioritize their problems. See force field analysis at http://www.gasou.edu/psychweb/mtsite/forcefld.html.

Symbol Review and Filter Change: To speed up the incubation process, we create symbols which help the unconscious focus on the problem at hand. These symbols should be simple, concrete, liked, in an area of strength, and should promote the interrelationship of the senses. Symbols should appeal to the emotions and to other senses than just sight. The use of symbolization enhances the specification of the problem (Nowak-Fabrykowski, 1992).

Verification: Verification is important in the process of creative idea/product development when the solution or product is tested against the requirements of the problem. The critical questions are "Does it do what it was supposed to do?" "Does it meet the standards set by those who want the product?" Verification comes before acceptance finding and it is for the developer a necessary condition for going on with the new product development, see Bailey, 1979.

Trademark/Patent Search: Typically a process in new product development where the inventor must prove that the idea is new and has not been taken directly from the work of another, Bailey (1979). This is part of the acceptance finding and verification process which must be done for all new products before they are test marketed. See http://www.patents.ibm.com/

Acceptance Finding: This stage of the model includes the discovery of who or why the solution might be used. If we want to implement the solution what are the actions that must occur? Who needs to be convinced? This may include customers (users), management (administration), regulators, and so forth. Examine the politics of the situation and determine what resistances need to be overcome. Develop a strategy for convincing others and begin to implement.

Another Problem Solving Model: Another problems solving model is presented at http://pcrest.com/cognitive.html. This model is very similar to CPS and the Bull and Montgomery Model and includes validating, documenting, understanding context, ensuring solution robustness and generalizing problem solutions.

Creating Original Associations

There are a number of methods for creating new and original associations, including: analogy/metaphor, bisociation, forced relationships, homospatial thinking, Janusian thinking, living the paradox, metaphorical thinking, similes, and transformations. Each of these is presented as related to the development of creativity.

Analogy and Metaphor: Analogy is drawing on the common likenesses of two or more things to infer other common characteristics (see Middleton, 1991). Metaphor is the suggestion of a resemblance between things which is not literally applicable (see Grossman & Wiseman, 1992). Metaphor and analogy are used to develop relationships which are not intuitively obvious. See http://www.ozemail.com/~caveman/Creative/Techniques/forced_analogy.htm .

Bisociation: Bringing together two dissimilar planes of knowledge or disciplines so that new associations are generated is the process of bisociation. New connections where none existed previously (Koesteller, 1964). See http://www.newciv.org/worldtrans/ncn/creativity.html.

Forced Relationships: Relationships can be forced by mechanical methods with a prescribed structure where random words or ideas are associated. Related words from two or more disciplines placed in a separate bowls or hats are drawn. The pair or triad must be associated to work on a specific problem. Another way is to find relationships between any known elements. See http://www.ozemail.com/~caveman/Creative/Techniques/forced_analogy.htm.

Homospatial Thinking: This process is actively conceiving two or more discrete entities occupying the same space, a conception leading to the articulation of new identities. This concept developed by Routhenberg (1979) relates initially to visual approaches to creativity. Based on his therapeutic work with artists with productive blocks this approach provides new insight in the visual metaphor. See http://www.coe.drexel.edu/CAE/AED2_954/CrProbSv.html .

Janusian Thinking: This process was initially described by Ari Routhenberg (1979) from his work with artists who had developed blocks in production. He worked therapeutically with a number of visual artists who described using the process when they were trying to create new visual metaphors. See http://www.compapp.dcu.ie/~tonyv/MIND/antonio.html http://www.delmar.edu/engl/instruct/stomlin/1301int/lessons/content/ruggiero.htm.

Metaphorical Thinking: This process is taking ideas from one context and applying them in a new situation. See http://www.ozemail.com/~caveman/Creative/Techniques/metaphor.htm .

Transformations: Feldman (1994) describes a universal tendency in humankind to produce new things, which is called "the transformational imperative." Piaget describes this process as reflective (or reflexive) abstraction. Creativity comes therefore as a result of transformation in one form or another.

Creativity Enhancing Techniques
For a list of creativity enhancing techniques see http://www.missouri.edu/~jourcw/creativ.html. Techniques included are asking questions, imagery, Scamper, dealing with creativity blocks and creativity enhancers. See online tools at http://www.q-net.net.au/~gihan/mindgames/tools.html..

Brainstorming: A group process (N = 5-10) under the direction of a skilled leader to generate ideas to solve a clearly posed problem in which there is no criticism, freewheeling is welcome, quantity of ideas are desired, and piggybacking is desired. See http://www.ozemail.com/~caveman/Creative/Techniques/brainstorm.htm For Axon's 70 checklists for creative problem solving, see http://web.singnet.com.sg/~axon2000/news.htm, see links http://haas.berkeley.edu/~marquis/creativity.html,. Another brainstorming program is found at http://www.tarkvara.org/interloq/quicktut.html.

Attribute listing: Attribute listing is the process of inventing something that is similar to an existing object by modifying its attributes (Davis, 1986). This is done by listing the major (and sometimes the minor) attributes of an object and then providing many examples of these attributes. See http://www.ozemail.com/~caveman/Creative/Techniques/attributes.htm .

Checklisting: A checklist is a series of checks, tests or considerations which are performed to insure that all relevant aspects of a problem are examined and that nothing of importance is overlooked. Polya's procedures, Osborn's lists, Bug lists (things that bug you) and others are examples of checklists (see Davis, 1986 are useful in helping defer judgment. See http://www.ozemail.com/~caveman/Creative/Techniques/checklists.htm .

Morphological analysis: Morphological analysis is an extension of attribute modifying in which specific ideas for each attribute are listed on each axis of an N-dimensional array such that all interactions are possible. It uses a two or three dimensional matrix to examine new relationships between variables, attributes, characteristics, etc. The objective is to rapidly generalize a new set of associations so that they can be used as triggers for further analysis and problem solving. See http://www.ozemail.com/~caveman/Creative/Techniques/morph.htm .

Visualization: Visualization is a process to use imagination to create a model or internal representation which shows how a thing, product,or event might look when completed. Visualization is different from imagery which recreates that which already exists and from fantasy which produces images that are unlikely to be replicable in real world media. See example at http://members.aol.com/omegagbg/1part1.htm .

Imagery: Imagery is the process of being able to recreate a picture or image of an existing object in one's imagination. This process is an essential but not sufficient condition for visualization. See http://web.singnet.com.sg/~axon200/brochure.htm for an idea visualization tool, http://haas.berkeley.edu/~marquis/creativity.html, or http://www.imagerynet.com/atlantis/ .

Guided Imagery: This is the process of encouraging imagery process and then guiding the images for heightened experience or insight. See audio tapes at http://www.touchstarpro.com/sommerville-tapes.html or http://www.cp.duluth.mn.us/~books/wpa/tr/gig/gig.htm .

Table 1

Characteristics of Creative Persons

Intuition	Internal/external openness	Internal/external sensation seeking	Preference for cognitive complexity	Novelty seeking
Inquisitiveness/ Curiosity	Reflectiveness	Introspection	Independence	Skepticism
Tolerance for ambiguity	High energy level	Enthusiasm	Single-minded goal seeking	Stimulated by frustration
Regression in the service of the ego	Internal locus of control	Self-confidence	Motivation to achieve	Aesthetic sensitivity
Insight	Innovation	Bisociation	Divergent thinking	Critical thinking
Metaphorical thinking	Honospatyial thinking	Janusian thinking	Humor	Visual thinking
Inductive thinking	Deductive thinking	Inventing	Lateral thinking (C0RT)	Vertical thinking
Visualization	Imagination	Imagery	Fantasy	Idea finding
Metacognitive skills	Idea finding	Preparation	Problem finding	Cognitive/affective/ skill base
Problem defining	Hypothesis formation	Incubation	Illumination/ insight	Elaboration/ explication
Acceptance finding	Verification	Model building	Trademark/ patent search	Entreprenuring
Intraprenuring	Constructive discontent	Conceptual blockbusting	Autogenics	Similes
Critical incident process	Recentering	Morphological analysis	Futurfict	Creative dramatics
Expressive activities	Sociodrama	Psychodrama	Relaxqation	Living the paradox
Bionics	Checklisting	Future problem solving	Creative problem solving	Brainstorming
Analogy/ metaphor	Synectics	Future studies	Set breaking	Attribute listing
Warm up	Creativity by design	Forced relationships	Transformations	Guided design
Guided imagery	Tagmenics	Analysis (Bloom's)	Synthesis (Bloom's)	Evaluation (Bloom's)
Diacrony vs synchrony	Decision making	Altered states of consciousness	Symbol review/ filter change	Self-actualization

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IMPLEMENTING IDEA'97 IN THE NEW MILLENNIUM
THE PROFESSIONAL DEVELOPMENT LEADERSHIP ACADEMY: ENHANCING COLLABORATIVE PARTNERSHIPS FOR SYSTEMS CHANGE

FORMING A PROFESSIONAL DEVELOPMENT LEADERSHIP ACADEMY

Amendments to IDEA '97 parts B, C, and D emphasize the importance of personnel development, stating requirements and suggestions in order for states to play a supportive role in the professional development of all those who work with children with disabilities. The significance of professional development and expectations for in-depth, ongoing, and systemic changes are clear. The strong expectations of high-quality professional development, with rigorous and relevant content, strategies for implementation, collaborative partnerships, and ongoing support created a need which is met through a grant awarded to the National Association of State Directors of Special Education - "Professional Development Leadership Academy: Enhancing Collaborative Partnerships for Systems Change."

The National Association of State Directors of Special Education, Inc. (NASDSE) promotes and supports education programs for students with disabilities in the United States and outlying areas. NASDSE is a not-for-profit corporation established in 1938. The membership and staff of NASDSE are committed to a performance-based educational system responsive to the needs of all children and youth, including those with disabilities.

A priority goal of NASDSE is to support education reform through systems change efforts resulting in improved educational systems for all children, with a strong focus on the inclusion of children with disabilities. Through the grant award NASDSE is able to meet this goal. NASDSE has established a substantial interagency cooperation through the "Professional Development Academy: Enhancing Collaborative Partnerships for Systems Change" to insure higher expectations, opportunities to achieve at higher standards, and positive educational outcome, for ALL children.

The Academy builds on NASDSE's ongoing leadership activities over the past five years which include:

- publication of *Leading and Managing for Performance: An Examination of Challenges Confronting Special Education,* which calls for major changes in the education of children with disabilities and for a partnership of special and general educators in educational reform;
- proposals for significant changes in the Individuals with Disabilities Education Act (IDEA) which emphasized the participation of children with disabilities in the general education curriculum and in broad based accountability programs;
- publication of NASDSE's *Vision for Balanced Accountability* which articulated a model of system accountability, individual student accountability, and input/process accountability;

- development of ongoing professional development programs including two Wingspread Conferences, supported by the Johnson Foundation, on different aspects of educational accountability; and
- implementation of a federally funded *Networking System for Training Education Professionals* professional development project.

THE NEED FOR A PROFESSIONAL DEVELOPMENT ACADEMY

All across the country, initiatives are being formulated at state and local levels to reform education. In the development of the education reform agenda, it has often been unclear where special education fits in the bigger picture of systemic change. Twenty-five years of social and political policy has clearly affirmed the right of children with disabilities to be included in a system designed to provide a free public education for all children of all people. A significant set of issues remain with respect to the creation of a unified system of education which brings together the best practices of individualized education approaches developed through special education and the large majority of educational programs that have been generically described as general education. A fundamental system change is required to bring together the communities of special and general education for the increased benefits to all learners.

The call for educational systems to provide a talented, dedicated, well-prepared teacher for every learner poses a challenge for the ongoing professional development of educators. Clearly the demand for schools and teachers to perform at increasingly higher standards must be addressed through effective systems of personnel development which support the concepts of ongoing assessment of needs and continuous improvement of teaching. As Sparks (1997) asserts, high levels of learning for all students is at the center of what we do as educators. To support this goal, every student must be provided a competent teacher and every teacher must receive high quality preparation, ongoing professional learning, and other support. This brings forth an urgent need for sweeping reforms that create state education systems comprised of competent educators who ensure that all students develop to their full potential.

The Professional Development Leadership Academy training curriculum and technical assistance will assist states to think and plan systemically. The Academy helps states as they establish and perpetuate substantial interagency, inter-institutional and interdisciplinary cooperation to insure higher expectations, opportunities to achieve at higher standards, and positive educational outcomes for ALL children. In attempting to implement the SIP requirements, enormous challenges will be faced by states and territories. Such major challenges include assisting state leaders to think systemically and to approach change more globally while forming a functioning, collaborative partnership in a collegial environment. These extraordinary challenges demonstrate a great need to create learning communities with the necessary knowledge and skills to increase the education outcomes for all children. From these challenges comes the opportunity to create the infrastructure necessary to support and sustain systemic thinking and collaborative partnerships. The Academy's curriculum, training, and sustained consistent technical assistance will help states as they meet these challenges.

THE PURPOSE AND OBJECTIVES OF THE ACADEMY

The purpose of the Academy is to assist states in the establishment and perpetuation of substantial interagency, inter-institutional, and interdisciplinary cooperation through the Professional Development Leadership Academy designed to insure systems change in support of educational reform. A substantial goal in support of this purpose is the creation of higher expectations, opportunities to achieve at higher standards, and positive educational outcomes for ALL children. These efforts are directed at the initiation and attainment of State Improvement Plan (SIP) requirements of the IDEA'97 Amendments (Part D, Section 653). The intent of these efforts is designed to assist state leaders to think systemically and approach educational reform more globally through achievement of the curriculum objectives which follow (See Table 1).

TABLE I

Professional Development Leadership Academy: Enhancing Collaborative Partnerships for Systems Change

OBJECTIVES:

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1 Form functioning/collaborative partnerships across all agencies concerned with the appropriate education of all learners.

2. Foster state infrastructures which support and sustain systems thinking and collaborative partnerships to enhance the education of all students, including those with disabilities.

3. Provide new knowledge, skills, and enhanced dispositions about leadership for best instructional and assessment practices to state leaders, with priority for participation afforded to members of traditionally under-represented groups (i.e., racial minorities, women, individuals with disabilities, etc.) and aspiring state leaders.

4. Create networks and form learning communities within state systems to achieve high expectations for all learners through accommodations of existing assessment and curriculum.

5. Develop technical assistance systems to participating state teams for sustained educational reform supporting higher quality instruction over a multi-year commitment.

CONNECTIONS WITH IDEA'97, THE SIP, AND PERSONNEL DEVELOPMENT

The IDEA '97 re-authorization Parts B, C, and D of the Act emphasize the importance of personnel development, stating requirements and suggestions in order for states to play a supportive role in the professional development of all those who work with children with disabilities. The significance of professional development and expectations for in-depth, ongoing, and systemic change are clear. The need for high-quality professional development, with rigorous and relevant content, strategies for implementation, collaborative partnerships, and ongoing support creates the opportunity to develop a Statewide Improvement Plan (SIP) to meet expectations and demands.

THE ACADEMY IMPLEMENTATION PLAN The Academy begins this year with a pilot year training two state teams, made up of key personnel, with continued technical assistance for a second year. The second year of the Academy, a cohort of five states will complete two training sessions, with sustained technical assistance their second year. The third year, the Academy will begin the full cycle. Two cohorts (each cohort containing five state teams) will complete two training sessions, with sustained technical assistance their second year. (See Table 2). As the Academy continues, training willexpand to two cohorts per year (bringing the total number of states trained per year to ten), with sustained technical assistance for the second year. Through Academy training sessions and sustained technical assistance, the state teams will have a written, collaboratively developed plan for immediate use, and the skills and knowledge needed for the ongoing implementation of the systems change activities in their SIP.

THE ACADEMY'S CURRICULUM

The Academy's training is based on an integrated rigorous curriculum; contains research-based content; leads personnel through strategies for state-specific implementation; allows for ongoing support;

and is driven by long-term technical assistance. Through the training process, opportunities for rural and small school educators, policy makers, administrators, teacher trainers, special educators, and parents to collaborate and form networks. The Academy director and assistant gather pertinent data during an initial technical assistance meeting with the state team before the training sessions begin. The data collected is used throughout both training sessions to reinforce, connect, and apply the session content with the needs of the state. During that time connections between the Academy curriculum, tasks to connect the training sessions with relevant state needs, and state commitment are carefully examined by the state team.

The Academy curriculum sections, which reflect IDEA '97 requirements and expectations, are organized around five content areas: Systems Thinking, Leadership, Organizational Change, Creating Collaborative Partnerships, and Systems of Accountability. **Each curriculum** area and purpose are listed in Table 3 below.

Table 3

Professional Development Academy: Enhancing Collaborative Partnerships for Systems Change

Curriculum Purpose and Content Outline

Section I: Strategic Thinking

Purpose: Individuals bring dynamic and innovative changes to their personal and professional lives as they apply strategic thinking to their repertoire of leadership options. Strategic thinking is the prerequisite to strategic planning and strategic action. With practice and experience, leaders and managers can move their organizations to think strategically and create the future they want for their organizations, markets, clients, or constituents. The "Strategic Thinking" Curriculum leads participants to think about how they think, reflect, and make choices, and to incorporate strategic thinking in their leadership styles.

Strategic Thinking Curriculum Outline:

1. Strategic Thinking as the Fundamental Basis for Change
2. Attributes of Strategists
3. A Comparison of Strategic and Non-Strategic Thinking
4. Thinking About How You Think
5. Strategic Thoughts for Making Changes in Your Own Life
6. Applications for Your Organization

Section II: Leadership

Purpose: The purpose of the "Leadership" Curriculum is to facilitate a system of leadership development which involves state teams in developing new and enhanced knowledge, skills, and dispositions as dynamic leaders who contribute as agents for systems change. Improved systems result in higher levels of educational attainment for all learners through the support of talented, creative, and well-prepared educators.

Leadership Curriculum Outline:

1. Theoretical Leadership Frameworks
2. Leadership versus Management
3. Change Process
4. Vision versus Mission
5. Leadership Effectiveness
6. Individual and System Accountability Through Leadership

Section III Organizational Change

Purpose: The purpose of the "Organizational Change" Curriculum is to empower all levels of education practitioners within the state team as they explore and identify change strategies. These change strategies will result in enhancing the systems thinking as they develop learning communities. The core of these unique learning communities is centered on acknowledging, enhancing, and sustaining values and beliefs that ALL community members learn and contribute in many different ways. This training will positively affect personal, professional, and systemic change in educational organizations, as participants engage these tools in the process of implementing organizational change at the individual, small group, and systems levels.

Organization Change Curriculum Outline:

1. Organizational Change at the Personal Level
2. Organizational Change at the Team Level
3. Organizational Change at the Organization Level
4. Organizational Change at the Systems Level
5. Organizational Change at the Strategic Level

Section IV: Collaborative Partnerships for Personnel Development

Purpose: The "Collaborative Partnerships for Personnel Development" Curriculum will assist state teams as they work with all stakeholders in order to recognize, establish, and maintain collaborative partnerships. Collaborative partnerships depend on the right mix of leadership, support, resources, people and plan of action. This training focuses on how to incorporate the characteristics of successful partnerships and build collaborative teams at the state, local and regional levels.

Creating Collaborative Partnerships Curriculum Outline:

1. Definition and Facilitation of Effective Collaborative Partnerships
2. Identification of Needs and Resources of Potential Partners
3. Establishment and Maintenance of Collaborative Partnerships
4. Identification and Resolution of Common Challenges to Effective Collaborative Partnerships

Section V: Systems of Accountability

Purpose: The "Systems of Accountability" Curriculum, building on the report of the Wingspread

Conference on Accountability, assists state teams in identifying and applying guiding principles for an inclusive accountability system. Shared responsibility between all state team members, shared responsibility between general and special educators, and an emphasis on building partnerships across service delivery systems helps state teams to emphasize an effective balanced accountability system.

Systems of Accountability Curriculum Outline:

1. Significance of Accountability in Education
2. Guiding Principles of an Inclusive Accountability System
3. Phases of an Inclusive Accountability System
4. Accountability for System Standards
5. Accountability for Inputs and Process
6. Accountability for Individuals
7. Barriers and Implications for State Teams
8. Application of a Balanced System in the State Framework

SUMMARY

The Statewide Improvement Plan (SIP) holds expectations high for personnel development as a part of the successful impact resulting in systemic change. Rural special educators benefit from the opportunities of networking and collaborating through the personnel development training expectations of the SIP. Training in leadership theory and practice for systems change, and ongoing technical assistance create opportunities for rural special educators to network and form learning communities. Access for all educators for professional development opportunities is imperative to successful implementation of the Statewide Improvement Plan. Professional development as a part of a system wide effort is the key to making this happen.

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SCHOOL-BASED TEACHER EDUCATION "*EN LA FRONTERA*": PREPARING SPECIAL EDUCATION TEACHERS ON THE ARIZONA-MEXICO BORDER

This program description complements the conference presentation by faculty and students in our school-based partnership program for teacher preparation on the Arizona-Mexico Border. The program is based upon a partnership between Nogales Unified School District in Santa Cruz County, and Northern Arizona University (NAU). The following information is provided for educators who are interested in implementing similar field-based programs:

--Background information regarding program planning.
--Nature of the school-university partnership.
--Implementation plan.
--Distinctive features of the university curriculum.
--Personnel: NAU faculty, mentor teachers, and students.
--Prospects for the future.

Background Information

In 1996, dialog was begun between Dr. Ray Ver Velde, who was then Associate Executive Director of Educational Research and Services for the Center for Excellence in Education at NAU (CEE/NAU) and Dr. Raul Bejarano, Superintendent of Nogales Unified School District, regarding the establishment of a school-university partnership to prepare teachers for the rural, Arizona/Mexico border area in southern Santa Cruz County. The site is approximately 350 miles from the NAU main campus in Flagstaff, Arizona.

After a two-year period of working with local schools and with Pima Community College, the first cohort group of twenty-five students was recruited, advised, and prepared for admission to CEE's Teacher Education Program and NAU. Most of these students had been taking coursework at Pima Community College, Nogales Campus, for several years, hoping that a teacher education program would eventually come to the region, so they were admissible to NAU as first-semester juniors on the basis of transfer credits from the community college.

They began full-time studies in the five-semester program on January 6, 1998, gathering with their resident NAU project faculty, Drs. Ray and Peggy Ver Velde, in a classroom supplied by Nogales Schools. When they complete student teaching in Spring of the year 2000, they will be eligible for certification and a college degree in Elementary Education and Special Education.

As the program began, CEE/NAU received a three-year grant funded by the United States Department of Education, Office of Special Education and Rehabilitative Services, providing resources for tuition, textbooks, materials, and other funding to directly support students. Our presence at the ACRES Conference is a tribute to this grant support.

Nature of the School/University Partnership

There are many interested parties supporting this initiative. In addition to the Nogales School District, the community of Nogales, Arizona, is involved, because all of the students come from the local area, or from Rio Rico and Patagonia--other small communities in southern Santa Cruz County. NAU's resident faculty also work closely with Pima Community College in Nogales and with NAU's Statewide Programs Office in Nogales to ensure that students earn the proper prerequisites for admission to NAU and CEE Teacher Education.

All of the students are employed as teacher assistants or serve as volunteer teacher interns in Nogales or nearby Santa Cruz County schools. They cannot leave home to attend college elsewhere because of family and financial constraints. These students represent a rich resource of expertise--bilingual, school-wise, and strongly motivated to become the skilled educators that this region needs. To underscore the partnership, the Superintendent of Nogales Schools met with students on the first day of class, reaffirming that there was almost unlimited opportunity for them to obtain teaching positions because of the shortage of qualified elementary and special education teachers in the area. This shortage was one of the factors leading to federal grant funding through the Office of Special Education and Rehabilitative Services.

Implementation Plan

Beginning in July of 1997, when the two NAU resident faculty moved from the NAU campus in Flagstaff to southern Santa Cruz County, an implementation plan was drawn which guided the project through its initial stages. These planning steps are included in this document because they may be relevant for other institutions seeking to establish school-based teacher education programs in areas that are far from the university campus setting.

--*Focus on students*: Recruit and advise students on an individual basis because each student has a unique background and situation.

--*Establish settings for school-based program*: This requires a strong and well-founded school/university partnership, based upon trust and mutual respect.

--*Provide inservice training for host schools and mentor teachers*: It is crucial that the school settings within which the teacher interns work allow them to take risks, try new strategies, and grow professionally.

--*Identify partnership opportunities within the community*: Cultural and service organizations, as well as businesses, can enrich the program with a variety of resources.

--*Establish close working relations with local community colleges*: Pima Community College branch campus in Nogales is vital for our program, offering a two-year program that complements the university program and providing advising for students who are planning to enter the program.

--*Initiate an evaluation component* : This must be aligned directly with the objectives of the program.

--*Seek funding to support and enrich the program*: School-based programs in remote areas need extra resources in terms of materials, supplies, and travel, and presentations by resource personnel with special expertise.

A formal program of coursework for the 25-student cohort group began in Spring of 1998. As of Fall, 1998, all implementation planning steps were complete, including a Summer workshop in leadership and teambuilding for mentor teachers and their student interns.

A Non-Traditional Curriculum in Elementary and Special Education

This five-semester program is non-traditional, in that it *integrates* at least 15 hours of coursework per semester. This means that each individual course is not taught in isolation, but is woven into a block of coursework in which there is no overlap or repetition.

Courses are scheduled for late afternoons, and taught by resident faculty and instructors from the NAU campus; Resource specialists and guest speakers enrich the course offerings with their expertise and enthusiasm for their topic.

In addition to attendance at lecture sessions, workshops, and seminars, each student is required to carry out a supervised internship each semester in an inclusive elementary classroom or a special education setting. For most students, this internship takes place in the course of their regular work as teacher assistants. For others, however, this requirement means that they must volunteer to work in classrooms in local schools. This school-based structure gives all students a chance to practice specific competencies and skills, as required by the Arizona Standards for Teacher Certification. The combination of coursework and daily application in the classroom makes this program highly efficient in terms of student learning and acquisition of teaching skills and abilities.

NAU resident faculty travel among eleven separate schools in three local school districts to visit the classrooms and workplaces of their student interns. When the NAU professors arrive at a school, they may find their student interns engaged in a great variety of activities, ranging from teaching reading to at-risk middle-schoolers to supervising learning centers in a first grade classroom. The experiential component of the program, woven throughout the integrated coursework, makes this a powerful program for our non-traditional students.

As of Spring semester, 1999, all students who began the program in January of 1998 are still in the program, thus keeping our original cohort group of 25 students intact. By Spring, 2000, they will be student teaching in elementary and special education settings. In May, 2000, they will have completed all teacher education coursework leading to a dual degree in elementary education (K-8) and cross-categorical special education (K-12).

Program Personnel: University Faculty, Mentor Teachers, and Student Interns.

The program succeeds because of collaboration and teamwork among the personnel involved in the project. Establishing these relationships is primarily the responsibility of the NAU project managers--the resident faculty who came to the region to implement the program in partnership with the Nogales School District.

Characteristics of University Faculty:

Because these individuals must build and maintain bridges between the university and the project, they need to know how to work within the institutional bureaucracy to solve problems for students and to keep the program on track.

This involves a thorough knowledge of teacher education curriculum, certification standards, and advising. In addition, resident faculty working in a remote site need credibility and connections with the home campus, in order to solve problems and overcome obstacles on behalf of students.

To assist them, they need visiting instructors from campus who also know how to work in this kind of setting. Teamwork and flexibility are key characteristics for those who would work in a field-based program.

However, getting along with the institution is only half of the equation. The partnership requires positive working relationships and strong credibility with the school district. Thus, university faculty need to become part of the school team, working with building administrators, teachers, and staff on a daily basis.

Most of our students are employed as teacher assistants in local schools. Because of the school-based nature of the program, they must also fulfill internship requirements, applying what they have learned in their university coursework in the context of their daily classroom work. This means that the university faculty/project directors must visit each student's classroom to observe his or her work, meet with their supervising mentor teacher, and maintain the close working relationships that make the program effective. As of Spring semester, 1999, we find our students in 11 schools, distributed among three school districts in southern Santa Cruz County: Nogales, Rio Rico, and Patagonia. In every school, we have been welcomed by building administrators, staff, and the all-important mentor teachers.

Mentor Teachers:

These professionals are key members of the project team. As supervising classroom teachers, they work with our student interns on a daily basis. In most cases, our students are employed as teacher assistants, although a few of them are working in other jobs and thus volunteer their time in the classroom in order to fulfill their internship assignments. Although this is the real world of the school, and their responsibilities are already heavy, the mentor teachers provide opportunities and encouragement for our student interns to practice the skills and abilities of teaching. They provide the all-important bridge between theory and practice for our students.

Since the project began, the NAU project faculty members have hosted two training sessions for our participating mentor teachers; a third workshop is planned for June, 1999. These in-service workshops engage mentors and student interns in an exploration of leadership and teamwork skills. Problems, issues, successes and triumphs are shared, building understanding and tolerance for the needs of everyone on the team.

Our close working relationships with the mentors are a real "plus" for the program and for our student interns. These teachers and supervisors are essential to the success of the program, providing our students with daily experiences and opportunities that make school-based teacher education effective.

The Student Cohort Group:

By the time they graduate in Spring, 2000, our 25-student cohort group will have been studying and working together for five semesters. They are all working adults, balancing full-time work, full-time study, and family responsibilities. Class sessions are usually three-hour marathons, held in the late-afternoon after everyone has been working all day. Patience, maturity, a sense of community, shared purpose, motivation…all these hold our group together as the program progresses through the program (not to mention the snacks, coffee, and diet soda that we all share at the 5:00 break).

In addition to motivation and dedication, however, our students possess strong academic skills, including the ability to speak and write in English and Spanish. In many cases, they will be the first in their family to earn a college degree.

The program is competency-based, highly structured, and demanding, especially because it is a dual-major program for elementary and special education teachers. However, the students have, so far, shown remarkable endurance and resiliency, and a willingness to take risks and accept challenges. As one of our students reflected, "Just think, if we can all keep together, we will all be walking across the stage at NAU in Flagstaff in our caps and gowns in May of 2000!"

Prospects for the Future:

The program has a positive outlook for institutionalization. There are a variety of factors that contribute to this prospect:

--NAU's institutional commitment to serving rural, underserved areas of the state;
--The reputation of the Center for Excellence in Education as a teacher education institution with a strong interest in training minority teachers for rural areas;
--Continuing need for bilingual, special education teachers for the Arizona/Mexico border region;
--Teamwork with Pima Community College in preparing the next cohort of aspiring teachers for acceptance to NAU's teacher education program;
--Strong partnerships with schools in the region.

The combination of all these factors promises a strong future for this much-needed program to prepare special educators for the rural, Arizona/Mexico border region in southern Santa Cruz County.

Research Opportunities:

There are many facets of this program which provide rich opportunites for research:

--The impact of school-based teacher education programs on local schools;
--Effects upon the level of educational aspirations within the community;
--Practicality of school-based teacher education for rural areas;
--Documentation of teacher competencies in classroom settings;
--Characteristics of effective project faculty;
--Patterns of school-university partnerships.

All these topics provide interesting questions and raise important issues that should be pursued. However, it should also be mentioned that the demands upon project faculty in a comprehensive program of this nature preclude a great deal of time being spent in formal research and writing. Although program evaluation is on-going and necessary, leading to improvements and modifications in the project structure, there is little time for designing formal inquiry projects. For a new professor, trying to earn tenure and promotion via the traditional routes of research, teaching, and service, a project of this type can be a professional risk.

Unless a university chooses to offer additional staffing and support, this individual will find it very difficult to administer the program while engaging in considerable formal research and writing. A welcome alternative would be for an institution to honor the work of field-site project directors with alternative types of recognition leading to tenure and promotion based upon the every-day action research and expertise that are an integral part of directing a successful program.

Summary:

Preparing high-quality professionals to serve children in rural schools is a challenge. Our school-based partnership program on the Arizona/Mexico border requires hard work, patience, and teamwork among individuals and institutions that are unaccustomed to working together--universities, schools, teachers, students, school-children, and parents.

Resources are scarce, and such things as stamps and duplicating paper become precious. The grant funding provided by the federal government, through the office of Special Education and Rehabilitative Services has enriched this project with welcome and much-needed resources such as the mentor teacher workshops and resource presenters with outstanding expertise.

In addition to the rural setting, the program incorporates school-based teacher education, requiring that students translate theory into sound, practical, classroom instruction on a daily basis. They grow as professionals because of their own dedication and the support of their mentor teachers and university faculty (those who are in-residence here as well as those who come from the NAU campus in Flagstaff to share their expertise with us and our students). It is our belief, from the results of this project and other school-based, rural-and-remote programs, that this strong link with schools provides the most powerful foundation to prepare effective special educators.

Every day is a new experience in this real-world program. It is sometimes frustrating for project faculty and students when dealing with university bureaucracy and procedures from a great distance. Fortunately, our host schools and districts here on the border are welcoming, appreciative places, and our university student interns, their mentor teachers, and the administrators and children in the classrooms make it rewarding and worthwhile. A note from one of our students is tacked up on our office bulletin board. It explains a great deal about the power and promise of programs such as this one:

"Thank you so much for all the extra time you put in checking our applications...but most importantly for making our dreams of becoming teachers possible. To me, words are not enough; I have decided to express my gratitude by receiving my degree and making you proud of the work I do."

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RURAL INFUSION THROUGH CASE METHOD INSTRUCTION

All teacher educators are challenged to attend to not only what preservice teachers are taught but also to how teachers are taught. In fact, *Preparing America's Teachers* (Cruickshank, 1996) proposes the use of case method instruction as one means to increase the connection of theory to practice. Historically, case method instruction is not new but may be a very effective method through which various content and process competencies for preservice students in special education can be taught. Also, case method instruction is receiving increasing attention in the special education literature.

This paper proposes that the case method is an excellent technique to infuse elements of rural special education into preservice programs. It offers ways in which "ruralness" can be emphasized through case selection, modification, or development. Case method instruction permits the instructor to developmentally infuse previously learned competencies so as to present problem oriented issues in the "real" world of teaching from a holistic framework rather than in isolation. It can be used simultaneously with other methods to extend students' content knowledge and processing skills. Finally, suggestions are offered to evaluate the attainment of student competencies in content and processes.

Benefits of Case Methods

There are many benefits to using case method instruction. McWilliam (1992) suggests that using the case method allows opportunities to practice active, student decision making and problem-solving, encourages the development of communication skills, and permits the integration of previously learned content with newly presented content. In Elksnin's (1998) survey of teacher educators who use case method instruction, it was interesting to note that few use strictly commercially generated cases. In fact, many report supplementing those available, developing their own, or having students generate cases. Also, instructors reveal that in preparation for using this method, they also employ a variety of other follow-up activities to extend the development of student competencies. Hallahan and Kauffman (1994) offer accompanying case examples to use with an introductory course text and purposefully link case questions to specific topics within the traditional text/chapter format. In other words, instructors can use this method in conjunction with other instructional techniques depending on the course objectives and needs of students, select, modify, or develop cases to fit specific instructional objectives and infuse uniquely rural issues. Further, this method allows the instructor to integrate process competencies through the use of this student-centered approach.

Highlighting Rural Issues

The case method is an excellent vehicle through which courses can contextualize, highlight, and thread "ruralness" into special education teacher preparation. Case method selection, modification, and development can be guided by our knowledge base in rural special education (Helge, 1983). Cole & Leeper (1995) provide in their "top ten" list a framework from which to start. For example, cases can be selected, modified, or developed which not only describe population density, distance issues, language/dialect, and economics, but also depict the great differences between one rural setting and another. Case modifications may include infusing the role of the "rural generalist" position rather than the categorical specialist. Case development should include, as McWilliam (1992) suggests, "...dialogue, characters' internal voices, and rich descriptions" (p.364). In developing cases, instructors can describe the beauty and uniqueness of rural special education and the community, the richness of its people, their self-reliant and creative nature, along with difficulties such as the scarcity of resources that may be part of a specific rural reality.

Building on Content Mastery

Case method instruction can be used to apply varying levels of content mastery. Depending on the experience and knowledge level of students, cases can include or the instructor can choose to focus on singular content application. An example for an introductory class may be the concept of least restrictive environment and the availability of the full or not so full continuum within a poor, remote, rural district.

Similarly, the instructor can gradually add to the complexity of the case application by layering additional content into the case or through focused questioning. For example, in a methods course for teachers of students with severe disabilities, the case may include reference to the intense medical needs of a student while framing the specific problem to solve within the context of the age of the student, the family's religious and cultural beliefs, the barriers of distance, accessibility, economics, and interagency or district cooperatives.

The case setting can reflect the "richness" of the local community and its people, and center the special educator's role as part of it rather than in isolation. Rural special education practice is uniquely identified through its reliance on the broader community orientation. The case method applied in this developmental manner, can be an effective tool to thread the rural knowledge base throughout courses and entire programs. The case content and the manner in which the instructor uses the case content permit various level of student application to gradually approximate the complex and often ambiguous but challenging world of rural special education.

Process Instruction Through Case Presentation

The versatility of the case method also permits the simultaneous teaching of student processing competencies. Practicing collaboration, communication, group problem-solving, and teacher reflection are necessary skills for effective rural special educators. Some questions to address in using cases are:

What previously learned (content knowledge) material do I expect of students? If the expectations are to develop collaboration skills, have I prepared students for these processes?

When are students expected to prepare for the case, i.e. in advance of class or in class?

What should be the focus of the discussion questions? Should they be content or process focused? Can I combine these? Can they be separated?

How should discussion questions be addressed? Should total class discussion be used or small group discussion?

Is the case presented to individuals or small groups? How are these groups formed? Are these groups temporary (one class discussion/case) or long term (over the semester)?

How will I handle difficult ethical situations if they arise?

How can I determine the effectiveness of case method instruction?

These questions must be considered to maximize the instructor's use of the case method. In other words, preparation and planning for specific use of the case must match the objectives of instruction. This method, however, provides ample opportunities for instructor flexibility and creativity.

Evaluating Case Method Instruction

Other than the standard or open-ended course evaluations by students and self assessment by instructors, there are various ways in which teacher educators can evaluate case method instruction. If the instructor is evaluating knowledge of content, traditional formats can be used to assess content mastery. In fact, cases can be used as evaluative tools both individually and in small groups to evaluate knowledge of content.

Process evaluation can take many forms. Collaborative, communication, and problem-solving skills can be evaluated by case participants, group members' assessments, or through observations by the instructor. Portfolio or project assessment can reveal skills attained in teacher reflection as well as the internalization of "rural" issues. A "dream job" project has been used in a methods course which is completed prior to student teaching. A similar project which is part of the student's portfolio is completed after student teaching and is compared with the earlier project. One intent of this comparative evaluation is to assess changes in student's beliefs about rural special education. This information is used formatively in course and program evaluation.

Summary

Case instruction extends opportunities for preservice teachers to engage in activities which embed content focus or technical teaching skills into the larger more complex authentic arena of the "real world of rural teaching". It is a vehicle to train teachers in the processes of decision making and problem-solving individually and within a team and rural service system context. The technique allows the developer to infuse uniquely rural elements into the case content. Learners are required to analyze processes from reflective and diverse perspectives. Indirectly, it allows preservice teachers to engage in the ambiguities of rural teaching practice while connecting theory to other application contexts. In short, it may not be a new teaching strategy but the way in which it is used can highlight key issues that are uniquely rural and may be one way to prepare preservice teachers to work and stay in rural communities.

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TEN YEARS OF DISTANCE LEARNING: CHANGING TO MEET GEOGRAPHICAL, INSTITUTIONAL, AND STUDENT CHARACTERISTICS

Since its inception in 1984, the Developmental and Behavioral Disorders (DBD) program at the University of Kentucky (Schuster, Collins, Nelson, Gast, & Wolery, 1991), a graduate program that focuses on Moderate/Severe Disabilities (MSD), has trained over 100 teachers. Since the vast majority of these teachers have returned to rural regions, the program has developed three major objectives to enable graduates to best meet the needs of their school districts. These include preparing graduate level personnel to (a) work in diverse settings with persons who exhibit developmental and behavioral disorders, (b) provide consultation, inservice training, and information dissemination related to serving persons with developmental and behavioral disorders, and (c) analyze and conduct applied research with persons who exhibit developmental and behavioral disorders.

In addition to the on-campus program, the Department of Special Education and Rehabilitation Counseling (EDSRC) has extended the outreach of the DBD program by offering distance learning classes through the Training Rural Educators in Kentucky (TREK) projects (Collins, 1997; Collins, Hemmeter, Schuster, & Stevens, 1996; Grisham-Brown, Knoll, Collins, & Baird, 1998; Schuster et al., 1991). The TREK programs have enabled rural special education teachers and related service delivery personnel (e.g., speech/language pathologists) to come together in small groups in rural communities to complete degree, certification, and/or teaching advancement coursework through distance learning technology (i.e., satellite, compressed video).

Whether students are enrolled in an on-campus or off-campus master's program, they complete a minimum of 36 hours of graduate coursework that includes a minimum of 9 hours of practica, 3 hours of thesis research, and 6 hours of elective coursework (selected from courses offered outside of the EDSRC). Regardless of the graduate program, all students must complete a series of courses that are driven by a philosophy in applied behavior analysis.

History of Distance Learning at the University of Kentucky

Our distance learning program began in 1989 with a personnel preparation grant from the U.S. Department of Education. The purpose of this initial TREK grant was to provide our graduate low incidence program to students in rural areas. This was accomplished by physically moving coursework to London, Kentucky. One faculty member delivered coursework in person at a site located approximately 75 miles from campus. An additional grant employee provided on-site practica supervision of students in their own classrooms. This program, though far from allowing access to most of the Commonwealth of Kentucky, did help us to provide distance learning coursework to a number of students who would not have been able to commute to campus.

Following this initial attempt, a subsequent grant, TREK-DL (distance learning) was received from the U. S. Department of Education to continue our distance learning program in low incidence disabilities. With the initiation of this grant, our graduate coursework in low incidence disabilities was provided through satellite and compressed video (interactive television) technology. One instructor taught coursework on-campus, and it was "beamed" to as many as six sites throughout rural Appalachia.

Viewing sites included community colleges in the eastern, southern, and southeastern parts of the State. Students continued to be provided with on-site practica supervision. This program certainly enabled students to complete coursework without coming to campus. However, the TREK program still had drawbacks. For example, students had access to a very limited number of faculty members, coursework was not interactive (students had to call in comments or questions at designated points in time), and often faculty spoke to empty on-campus classrooms since the off-campus and on-campus programs operated separately).

Given these drawbacks, a third grant (also TREK-DL) was submitted and subsequently funded through the U. S. Department of Education which further assisted us in refining and expanding our distance learning program. This program expanded our distance learning graduate program in low incidence disabilities by having the program be viewed in additional sites throughout the Commonwealth. Up to eight different sites received coursework through distance learning. TREK-DL also allowed us to refine our program by continuing to offer coursework through satellite technology and adding more coursework using compressed video technology. The latter allowed faculty and students to continually see one another and allowed students an immediate means to ask and answer questions and to participate in discussions in a timely manner. In addition, TREK-DL adopted a team teaching model for all courses using DL faculty and on-campus faculty. All courses were taught through team teaching (Collins et al., 1996) with both on- and off-campus students attending courses together. Practica supervision continued to be supervised at distance sites. Although students across the state had greater access to our graduate program in low incidence disabilities, we thought we could further develop our program to meet the changing needs of our students, faculty, college, university, and state.

Therefore, we submitted yet a fourth distance learning grant. Fortunately, we received the TREK-CR (Collaborative Relationships) grant from the U. S. Department of Education in 1998. This grant created some additional challenges for us that, hopefully, will continue to provide more refined distance learning opportunities for our faculty and our students. In this latest grant, we have implemented several additional variables. First, we are requiring students to attend some on-campus activities (e.g., practica meetings, orientation meetings) so that they will be exposed to each other and additional faculty. Second, we are trying to rid our students of the isolation they experience by pairing them with current or former students in their region and requiring cross program visitation. Third, given our limited resources as a faculty, we are providing guest lecturers from noted experts across the country via distance learning technology. Fourth, we have completely merged our off- and on-campus programs. We now only have one program – students just attend classes in different locations. Fifth, we have received more of a financial commitment from our distance learning office that will, hopefully, become permament. These are just some of the changes we have made over the 10 years we have had TREK. The following section will describe, in detail, the variables that affected our evolution in delivering distance learning in low incidence disabilities.

Variables in the Evolution of Distance Learning at the University of Kentucky

As our distance learning program has evolved, we have tried to be sensitive to the variables the have affected our ability to efficiently deliver an effective, high caliber program. We have viewed distance learning as a dynamic process. Just as we train our students to use data-based instruction, we have tried to collect and analyze project data and to make modifications based on that data. Over the past 10 years, we have found that areas we have identified for improvement have fallen into categories of (a) geographic needs, (b) institutional needs, and (c) student needs. The following table shows how our project has evolved as we have attempted to address each category of need across project cycles.

Variables in the Evolution of the TREK Distance Learning Projects

Project	Type of Need	Specific Project Need	How Project Need Was Addressed
TREK (1989-92	Geographic	Need to provide specialized graduate level certification training in Appalachian region of state	On-site distance learning classes in centrally located site with supplemental on-site supervision of practica
TREK-DL (1) (1992-95)	Geographic	Need to serve more students across larger geographic area	Courses changed from on-site to delivery via distance learning technology (primarily satellite supplemented by compressed video)
	Student	Need for student exposure to more faculty	Recruitment of more faculty to teach distance learning courses
		Need for student interactions with other students	Simultaneous delivery of on- and off-campus courses
		Need for instructor assistance in teaching merged on- and off-campus	Adoption of team teaching model
TREK-DL (2) (1995-1998)	Institutional	Need for sharing of resources across state institutions	Collaborative multi-university course in transdisciplinary services
	Institutional	Need for improvement in delivery technology	Addition of more compressed video course delivery
	Institutional	Need for project assessment data to refine program	Follow-up surveys of distance learning students
	Student	Need for student tuition stipends not reliant on grant support	Students connected with state certification funding sources
	Student	Need for students to be a part of the campus program	Required campus presentations and meetings
	Student	Need for student training in distance learning skills	Article written by instructors for entering students
TREK-CR (1998-2001)	Geographic	Need for state network of professionals to combat isolation	Cross-program visitation requirement for students
	Geographic	Need for isolated students to have exposure to national expertise	National guest lecturer presentations added to courses through distance learning technology
	Institutional	Need for faculty/staff trained in distance learning skills	Creation of distance learning doctoral program
	Institutional	Need for more options of interaction and delivery	Addition of support materials using the internet

	Institutional	Need for more program funding not reliant on grant support	Funding formula based on number rather than course
	Institutional	Need for university commitment to distance learning regardless of grant funding	Faculty retreat resulting in formal commitment to institutionalize core courses
	Student	Need for content support and expertise on distance learning sites	Employment of former students as site facilitators
	Student	Need for creation of special education network to overcome isolation	Cross program visitations between students
	Student	Need for ongoing support during thesis research	Creation of thesis seminar

Discussion

Over the 10 years of delivering distance learning in the area of low incidence disabilities, whether through our "crude" efforts at "driving to the students" or through our high tech efforts to provide nationally distinguished lecturers to our students, we have learned, we think, some valuable lessons.

Get everything in writing before you start anything. This is one of the most valuable lessons we have learned. Although we do not think we are naïve, people make commitments easily in the planning stages but often do not follow through. For example, our university made a financial commitment to parts of two salaries on our latest grant. However, after the initial semester of the project, the university decided they would financially commit based on the number of students enrolled. To date, this has not been a problem and, although our university states that they will honor their initial commitment, changing the rules mid-stream provides for some tense moments.

The bottom line for a university is money. This is especially true when trying to institutionalize a program. In our first several grants (when the university did not have much of a commitment), the university did not notice or count our numbers very often. However, with the growth of distance learning and the competition for time slots for the use of technology, the university is now concerned with numbers. We, as faculty, need to obtain additional resources through grants and use already established state programs to obtain student tuition. For example, in Kentucky the state department awards traineeship money to teachers certified in other areas who are seeking new certification in low incidence disabilities. We need to make sure our students know about these funds (of which they are often unaware). Additionally, we need to have in place on-going, effective recruitment policies and practices to maintain acceptable enrollment numbers.

Higher enrollment is a mixed blessing. Although increased numbers provide some type of program security, those numbers (a) increase faculty workload, (b) decrease one-to-one contact between the faculty member and the student, and (c) may result in a decline in quality assessment. Our purpose is to train certified teachers in low incidence disabilities; however, some of our classes can be taken by teachers working on rank programs at other universities and in other areas. What we have tried to accomplish is to recruit heavily in "general" courses such as Introduction to Special Education and Legal Issues in Special Education. By having many non-certification students, visiting students, and students from other universities in these classes, we increase our numbers to get our university funding. However, these students are not "our" students and therefore do not require the amount of advising and commitment that our certification students require. In addition, this practice allows us not to be as worried about enrollment in our certification courses since the numbers are offset by the students in the general courses.

Do not expect things to change overnight. Many individuals, including staff, faculty, and students, are wary of distance learning. Faculty resistance frequently has occurred. Teaching in a distance learning classroom with cameras, monitors, and other equipment makes teaching different in those environments. Some people, we have found, just are not good distance learning faculty. There are personality variables that affect the success of this type of teaching. However, we have found that, sometimes, resistance can recede through team teaching methods and additional exposure to the technology. Staff can be resistant since distance learning requires much more work. Staff need to complete different forms, work with different campus offices, and communicate with many other sites and people that they would not normally have to do with on-campus classes. If you, as a faculty member, know all the new staff responsibilities, you can initially act as a buffer between staff and the new rules, regulations, and people. University and state policies also can be resistant to distance learning. There are regional boundaries in our state associated with each university. Stepping outside of our university's service area and into another university's service area to provide coursework has been a long and tedious process at times that has required involvement from our central administration.

You do not have to use technology just because it exists. Some courses are not delivered appropriately as internet courses. Other courses are not appropriate to deliver through satellite technology but may be appropriate for delivery via compressed video. Sometimes technology is not appropriate at all. We have found, and research confirms, that face-to-face on-campus communication is a very important factor when delivering distance learning. It allows relationships to be developed between students and between faculty and students and also allows students to have an on-campus orientation.

Distance learning students may have different expectations than their on-campus counterparts. They often have different expectations and different motivations for completing the program. Sometimes distance learning "spoils" students. For example, we had students attending class in a site approximately 75 miles from campus. The distance learning room had been reserved a year in advance for another conference for two sessions of class. Our students were informed that they would have to travel to another site that was located about 20 miles away for those sessions. Many students were very unhappy about the additional travel. Since distance learning technology can bring our program so close to our students' homes, their expectations about what a university should provide is quite different, at times, from an on-campus student. In addition, when compared to their on campus colleagues, distance learning students are generally older, come from different cultural backgrounds, often have different work experiences, and rarely, if ever, attend school full-time. These factors present different expectations for the operation of our program.

Quality of coursework does not have to change when distance learning technology is used. We often hear from faculty that the quality will suffer when using distance learning technology. Although using distance learning may have quirks that are not associated with on-campus instruction, we have maintained, we think, our quality of the program. We have continued our thesis requirement and have the same grade expectations for off-campus students as we have for on-campus students. However, some flexibility is required. For example, if our technology fails, rather than "writing the night off", we send students tapes of the lecture they missed. If 4 out of 40 readings do not show up in their site library, rather than say that those few do not constitute a majority of what we want learned (which would be easy to do), we make sure they get copies of any missed readings before evaluating their knowledge of the content of those readings.

Scheduling distance learning courses can be a nightmare. Trying to coordinate between on-campus time slots and classes, the distance learning office, the receiving sites, and the distance learning classrooms is tedious and competitive. In addition, varying time zones may be involved. We have learned that you have to look out for yourself and your program. Get your requests in a year in advance. Make sure you have a on-going relationship with personnel in your distance learning office. Never give up a time slot. Make sure that you have something to place in any time slot you have previously used. Once you give up a time slot, it is difficult to re-establish that slot. Working with your competitors over available time slots is necessary. Not all your courses have to be conducted through compressed video, if you have other technologies available to you. Prioritize the courses that need satellite (one-way visual, one-way audio) and compressed video (two-way visual, two-way audio) modes. In addition, try to schedule courses that meet periodically (e.g., practica, thesis seminar) at non-prime time hours.

Everything that can go wrong will go wrong. Among other things, technology fails, readings in remote libraries disappear, and assignments are lost. We have learned that being fully prepared is not good enough. Contingency plans are needed for a variety of situations and problems.

Do take anything for granted. This is the final lesson we have learned and includes university support, regional accreditation, demand for coursework, and even student etiquette while in distance learning classrooms. During our TREK programs, our regional accreditation agency lost our accreditation paperwork (as did our central office administrators), university support has swung like a pendulum, and demand for coursework is dependent on recruiting and advertising. In addition, we have developed and written an article that we require our distance learning students to read, that describes how to be a good distance learner (Collins, Grisham-Brown, & Schuster, 1999). Although some may think the article is simplistic, it was written in response to student behavior we observed.

Conclusion

In summary, we think we have learned much during 10 years of experience in a constantly evolving distance learning program that may be of value to others who are thinking of beginning such a program. Above all else, we would stress the importance of continually evaluating the needs that arise within one's geographic region and institution, as well as across the students who will be the distance learners. Nothing about distance learning is static. As technology develops, needs change and new problems arise. Those who venture forth must do so with an attitude to embrace change, with the analytical skills to evaluate program data and make modifications, and, perhaps most important, a sense of humor.

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SUPPORTING TEACHERS OF CHILDREN WITH AUTISM IN THE FIELD THROUGH DISTANCE EDUCATION AND THE USE OF VIDEO PORTFOLIOS

ATTAIN: An Autism Training Initiative for Frontier Areas

ATTAIN is a three year project funded through the U. S. Department of Education, Office of Special Education Programs. The purpose of this program is to provide a comprehensive statewide program of study to increase the capacity of Wyoming's elementary and special education teachers to deliver state-of-the-art educational services to children with autism.

While autism is referred to as a low incidence disability, it is by no means a rare disorder. Current studies show prevalence rates of greater than 10 per 10,000. A rate of at least 22 per 10,000 has been estimated for the broader autism spectrum disorders (Costello, 1996). Autism is a developmental disorder with a very early onset and is chronic over a lifetime. Childhood autism is a spectrum disorder characterized by deficits in social behavior, impaired communication and unusual behavioral patterns including stereotypic routines (DSM IV, 1996).

In 1994-95, the U. S. Department of Education reported that there were 19,058 students with autism in the United States. This number increased to a total of 22,780 students with autism in 1995-96. Wyoming, as other states, has seen an alarming increase in the identification of children with autism. In Wyoming, between 1994 and 1997 the number of children identified with autism grew from 28 to 55 (Table 1), while the total student population decreased from 100,314 in 1994-95 to 96,504 in 1997-98.

Table 1. Increase of identified children with autism in Wyoming.
K-12 Children Count Data, Wyoming Department of Education

Year	Total Student Population	Total Disabled	Autism
94-95	100,314	10,939	28
95-96	99,859	11,326	34
96-97	98,777	11,638	48
97-98	96,504	11,807	55

Appropriate identification, assessment, management, and education for this population is complicated and requires the cooperative efforts of skilled, well-trained professionals in the disciplines of education, psychology, and communication disorders. Unfortunately, graduates in education seldom receive adequate preparation for meeting the special needs of these young children. With the rising population of identified students with autism in Wyoming, it is disturbing to note that 76% of teachers working with students with autism reported that they didn't feel prepared to teach this population (Zahn, 1996).

In 1997, only one person in the state was identified as being qualified to diagnose and provide technical assistance to teachers working with children with autism. Most teachers in Wyoming working with children with autism have relied on gathering needed information from out-of-state conferences and from parents and parent advocates. Another obstacle in meeting the needs of Wyoming's children with autism is the frontier nature of the state. Wyoming is one of the largest states in the Union spanning a distance of nearly 100,000 square miles, yet its population at about 500,000 is that of a small city. In an attempt to overcome these obstacles, Wyoming Institute for Disabilities/uap (WIND) with the College of Education at the University of Wyoming developed a unique distance education program to train teachers in the field.

Personnel Development through Distance Learning and Video Porfolios

Wyoming is a profoundly rural state with teachers working in isolated communities one hundred and more miles apart. This, along with the state's rugged topography and harsh winters, makes travel difficult for a large part of the year. Wyoming also has only one University that is inconveniently located in the far southeastern corner of the state. These facts necessitate creative alternatives to traditional personnel development, including the extensive use of distance learning technologies to serve classroom teachers in the state.

In Wyoming, teleconferencing is currently the most widely accessed form of distance education. Although compressed video is available, it is difficult to access at a time that is most convenient for classroom teachers. Though there are several sites across the state to access compressed video, class participants often have to drive more than a hundred miles to the nearest site. Therefore, teleconferencing continues to be the delivery mode of choice.

It is believed by some that while distance learning is an appropriate and efficient way of teaching new information, it is not an effective medium for teaching and monitoring the acquisition of new skills. We have found that the use of video portfolios in conjunction with distance learning and on-site meetings facilitates the direct teaching and monitoring of specific skills. This presentation will focus on a distance education program currently offered through the University of Wyoming that is proving to be effective in training and supporting elementary teachers in the field who are working with children with autism.

The ATTAIN Program

The Wyoming Institute for Disabilities/uap (WIND) and the University of Wyoming developed a distance learning program using a combination of summer institutes, distance learning classes including teleconferencing and compressed video, on-site whole class meetings. Video portfolios provide a record of professional development and a basis for monitoring the acquisition and application of teacher-in-training skills in the classroom. In addition, the program offers field support to address needs of individual teachers in their classrooms.

1. Summer Institutes (1998)

A cohort of 18 elementary and special education teachers from around the state of Wyoming attended two week long Summer Institute sessions during the summer of 1998. The Institutes were taught by two individuals with expertise in autism, Dr. Sally Rogers from Children's Hospital in Denver, Colorado and Sheila Merzer who has a private practice in Minneapolis, Minnesota. The Institutes included information on characteristics of children with autism, functional assessment, writing goals and objectives, educational planning, and selecting instructional and behavioral support strategies based on functional assessment information. During one Institute, Shelia Merzer modeled skills related to functional assessment with children with autism for teachers-in-training. Teachers completed the Summer Institutes with 80 hours of training in autism.

2. Distance Delivery Courses and Video Portfolios (1998-1999)

In the fall of 1998 and the spring of 1999 teachers-in-training enrolled in graduate level courses offered through the University of Wyoming School of Extended Studies. The courses provided opportunity for students to discuss information from the Summer Institutes on an ongoing basis and apply that information in their everyday work with children with autism. During the fall, teachers reviewed and practiced functional assessment skills and in the spring they practiced using and evaluating the effects of intervention strategies with children with autism in their schools. Courses were offered every other week through teleconferencing. During the courses teachers discuss the results of their application activities from the previous two weeks and reading material from textbooks. At the end of each class teachers choose an assessment or intervention strategy to try for the following two weeks.

Each teacher-in-training videotaped samples of their assessment and intervention activities and kept a video portfolio that demonstrated application of skills throughout the year. During the midterm and final meetings of the fall and spring courses, teachers-in-training meet at a central location in the state and give presentations to class members and instructors using clips from their video portfolios. Presentations include discussion of skills teachers are working on and problems they have encountered. Class members discuss and problem-solve real-life cases and instructors assess students' attainment of course outcomes related to assessment and intervention. The advantage of video portfolios is that instructors can see how teachers are using skills in the classroom and give specific feedback. For the final project at the end of spring semester, teachers will develop an inservice training module (including clips from their video portfolios if appropriate) that can be used in discussing issues related to autism with parents, community members and/or teachers and administrators.

3. Field Support (1998-1999)

One course instructor serves as a field support person and visits teachers-in-training at their schools to observe their practice and assist them with applying the course content in their settings. This personal contact meets important needs for individual attention for teachers-in-training that is difficult to provide in distance learning.

4. Summer Institute 1999: A Capstone Course

During the summer of 1999, students will enroll in another Summer Institute that will serve as a capstone course. This will be one week Institute taught by Carol Gray from Michigan who will focus on issues related to social skill development for children with autism and collaboration with families and others to support social skill development in these children.

The ATTAIN Curriculum

If teachers-in-training successfully complete the ATTAIN program they receive an endorsement from the state of Wyoming identifying them as specialists in the education of children with autism. The ATTAIN curriculum is designed to guide teachers in acquiring and demonstrating specific skills inherent in the following outcomes:

a. conducting functional assessments;
b. translating assessment information into goals/objectives;
c. planning appropriate education programs;
d. using assessment information to select effective behavioral and instructional support strategies for use in everyday settings;
e. evaluating the effects of intervention and;
f. collaborating with family members, general education teachers and other service providers throughout the assessment, program planning and education process.

Although the ATTAIN curriculum is structured so that teachers-in-training focus on defined outcomes and skills throughout their training, it is also an emergent curriculum that is responsive to everyday concerns of teachers. Each week teachers apply course content to meet the unique needs of their students with autism and evaluate the results of their assessment and intervention efforts. These efforts are recorded and kept in a video portfolio maintained by each teacher. The video portfolio provides evidence of emerging skills of teachers as well as student response and progress in relation to those skills. Teachers review videotapes and reflect on their practice and they share videotapes with other teachers-in-training. This sharing of videotaped experiences provides the opportunity for discussion and problem solving of real situations in rural environments that all class participants can learn from.

A Look Toward the Future

Project staff and teachers-in-training report that the delivery of curriculum through the ATTAIN program is effective and that the video portfolios greatly enhance the distance delivery courses. The project will continue throughout 1999 and 2000. In addition to building capacity in the state of Wyoming to provide services for children with autism in inclusive settings, the project may serve as a model for providing skills based training in other areas of special education for teachers around the state.

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TECHNOLOGY

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CONVENIENT DISTANCE EDUCATION TRAINING IN TECHNOLOGY

It is well known that rural districts have traditionally found it difficult to provide professional development to their education professionals. In many cases, the cost of school release time, travel, and increased burden on the participant have limited rural-based training to 1-2 day inservices at best. Distance Education programs can be a cost effective and efficient way to train large numbers of these professionals. A major concern, however, is the selection of good distance education programs. The true instructional design professional knows that developing quality distance education programs is time consuming, expensive and takes professionals with skills in multimedia development. Most of us have participated in a variety of poorly developed distance delivery models during the past several decades. These programs, which give distance education a black eye, are still in abundance. Excellent programs such as the Transition Training Program developed by Philip Browning and Karen Rabren at Auburn University offers states, regional organizations and school districts the opportunity to provide professional development programs on a statewide basis.

The National Association of State Directors of Special Education, through their Research Institute of Assistive and Training Technologies (RIATT@NASDSE), has developed the capacity to help states and local organizations provide a planned approach to professional development in the area of assistive technology using distance education. This award winning distance education program offers convenient, inexpensive training to professionals using a multimedia based distance education model that can be completed entirely from one's home. The multimedia aspect of this program means that participants can gain information regarding best practices in assistive technology through a series of anchored instruction that includes, videos, textbooks, article reprints, CD-ROMs, floppy disks and hands on kits.

The RIATT@NASDSE program utilizes 15 different 4-week long courses in which participants use their multimedia materials and electronic mail to complete their assignments and participate in class discussions. The strength of the program comes from the fact that the 15 courses are offered every other month, affording maximum flexibility to participants in statewide programs to sign up and complete their training. Because each course is designed to be completed in a self-paced format, the participant can schedule their learning time in a way that best meets their schedule within the 4-week period that the course is running. To participate, all one needs is access to a television with a VCR, computer with CD-ROM, and electronic mail. As a part of the program, participants earn CEUs and can work toward Competency Certificates in specific areas of assistive technology, including a Basic Competency Certificate (recommended by NASDSE) as well as Professional Certificates in the areas of Severe / Profound, Communication, General Classroom Teaching, Occupational and Rehabilitation Therapy, Paraprofessionals, Early Childhood, Administration and School Psychology. The Basic Competency Certificate, obtained by taking 6 specific courses, provides the necessary minimal competencies required to provide the assistive technology services as mandated by IDEA. Several universities throughout the country also accept the RIATT@NASDSE courses as graduate and undergraduate credit. One university in particular (Fort Hays State University, Hays, KS) offers a distance education masters degree with an emphasis in assistive technology using the RIATT@NASDSE coursework.

To date, the RIATT@NASDSE program in assistive technology has been successfully implemented in several states and is expanding to include many more in the near future. These states report several positive outcomes as a result of utilizing this distance education program which include:

- Renewed statewide enthusiasm as professionals learn together and trade ideas
- Access to training by all rural-based professionals
- Enhanced communication between districts (IEP exchange is easy to understand since all use the same approach and language)
- Increased participation at conferences due to a common knowledge and interest
- Increased effectiveness of current state training practices due to a common knowledge-base
- Satisfaction of parental concerns regarding competency of assistive technology services
- Development of an educational workforce abreast of the assistive technology mandates of IDEA 97
- Participation of professionals who never had the opportunity of release time or finances to participate in centrally located training programs

There are challenges, however, in planning and implementing an effective statewide training program utilizing the RIATT@NASDSE distance education program. Frequently, assistive technology training programs already exist through regional, university, or other local efforts. The RIATT@NASDSE program must be coordinated with these existing programs in such a way that the expertise already available within the state are fully utilized. In this way, the RIATT@NASDSE program builds upon existing programs and serves to address any areas in which gaps in training may exist.

In addition, some professionals are fearful that distance education can not incur the same type of learning (i.e., hands-on or application) that the more traditional, face-to-face approach to instruction does. Indeed, while this may be true for the many types of "talking head" videos that are passed off as distance education today, the RIATT@NASDSE program has been shown to do quite the opposite. For instance, unlike most university training programs that are built by 1-2 professors within the faculty, the RIATT@NASDSE program was designed by a team of instructional designers, multimedia experts, content experts and instructors. The resulting multimedia training program is much more comprehensive in its coverage of material, variety of assignments, and interest to participants.

Regardless of these difficulties, several organizations have risen to the occasion by implementing statewide training programs that have met or exceeded their expectations. What follows are just a few examples of how some states have used the RIATT@NASDSE distance education program in assistive technology to enhance their professional development capacity. Explanations of each state program were provided by the Project Coordinators.

Kansas (State Director: Carol Dermyer, Project Coordinator: Pamela Cress)

The Kansas goal was (and is) to increase the capacity of our state to provide assistive technology services to individuals with disabilities. We identified 15 leadership personnel through a competitive process and provided scholarships for them to become trainers. Funding for these scholarships was obtained from our state's Tech Act grant, the State Department of Education and Vocational Rehabilitation, the State Agency for Developmental Disabilities/Mental Retardation, the state Part C program and other sources.

The 15 trainers are now training others and will have trained 168 Kansans in 892 RIATT@NASDSE Assistive Technology courses by the end of Spring 1999. Recently, Fort Hays State University, using trainers approved by both the University and by RIATT@NASDSE, have begun to offer coursework and a masters degree with an emphasis in assistive technology completely through distance education (http://fhsu.edu/coas/mls.html). This training program has resulted in a much broader base of knowledge in assistive technology, which has lead to improved services and outcomes for our citizens with disabilities throughout the state.

Indiana (State Director: Robert Marra, Project Coordinators: Shirley Amond, Vicki Hershman)

PATINS is an Indiana Department of Education, Division of Special Education, assistive technology initiative designed to provide statewide systems change by providing training, resources and technical assistance to local education agencies throughout Indiana. The project's activities are provided through its five regional operational centers. In October of 1995, PATINS joined the Research Institute for Assistive and Training Technologies' (RIATT) Partnership of States. Based on the need to provide a wide range of training opportunities to service providers in Indiana's public schools, PATINS began delivery of the RIATT Accessible Learning Materials in August of 1996. At the end of the first year, the project entered into an agreement with RIATT@NASDSE for continuing the delivery of the RIATT materials and course work for professional development and continuing renewal units. During the first two years of the PATINS/RIATT Accessible Learning Program, a total of 15 courses were provided to 971 service providers. The strengths of the program include regional access to training programs, self-paced study, multi-media learning opportunities and networking opportunities for participants. The State of Indiana continues to be committed to the development and provision of competency based training opportunities for public school professionals.

Maine State Coordinator: David Stockford , Project Directors, Kathy Fries, Kathy Powers)

Maine's plan for increasing skills and competencies in assistive technology is multifaceted and directed toward helping educators and other professionals understand the role assistive technology plays in helping all students achieve the high standards outlined in Maine's Learning Results. One important resource in this effort is the RIATT@NASDSE program. A two step strategy for using this resource is currently being implemented through a Maine Department of Education and University of Maine System partnership that is outlined below.

In an effort to increase the University's personnel preparation program's capacity to increase awareness of assistive technology among professionals, six awareness modules, using the RIATT@NASDSE courses, were incorporated into the University's standard offerings during 1997 and 1998. Close collaboration between the staff of Department of Education, Special Services, Maine's Tech Act Project (MaineCITE) and the University of Southern Maine is a key reason for the initiative's success. The second development stage is built into Maine's Statewide Improvement Plan. It expands to 100 the number of participants that will be enrolled in this distance learning professional development activity over the next two years.

Ohio (State Director: John Herner, Project Coordinator: Susan Wilson):

The Ohio Assistive Technology Distance Learning project received a substantial grant from the Ohio Office of Information, Learning and Technology Services to implement a statewide program. Our accomplishments have been many and a summation of the evaluation data is being compiled. Ohio delivers the RIATT@NASDSE professional development courses in assistive technology through Bowling Green University (approximately 700 credit hours to date) to district AT teams throughout the state. Participants have noted numerous examples of positive impact on students with disabilities as a result of their involvement in the project. All of the partners in this grant are extremely committed and have put forth great effort to ensure its success. We are thrilled with the achievements made on behalf of our students with assistive technology needs!!!

Idaho (State Director: Nolene Weaver, Project Coordinator: Jane Brennen)

The State of Idaho is in its third year of a statewide training initiative in assistive technology utilizing the RIATT@NASDSE distance education program. In addition to providing training, this project fosters linkages for school district personnel with the state's 5 assistive tech resource centers as well as with vocational rehabilitation. The number of district teams participating in this program continues to grow each year, with the total currently at nineteen. As a result, approximately 46% of the student population has direct access to teams trained in assistive technology.

Alabama (State Director: Mabrey Whetstone, Project Coordinator: Crystal Richardson)

In December, 1998, the Alabama Department of Education, Special Education Services recruited personnel from local education agencies and universities to participate in a statewide training program using the RIATT@NASDSE distance education courses. Over 100 individuals across the entire state have enrolled thus far. Individuals who met the January deadline have received their training kits, and have begun their training under RIATT@NASDSE's "turnkey" plan. The State Department of Education, Special Education Services is pleased with the response and plans on accepting additional applications.

New Mexico (State Director: Robert Pasternack, Project Coordinator: Gary Adamson)

New Mexico was one of the first states to utilize the RIATT@NASDSE materials on a statewide basis. School districts throughout the state provided support (equipment and funding) for their professionals to participate in the statewide delivery of training in the assessment, use and implementation of assistive technology services to children in both regular and special education. To date, over 90 professionals from across the state have been trained, placing an A.T. Specialist within 50 miles of every special education child in the state.

New York (State Director: Lawrence Gloeckler, Project Coordinator, Fred DeMay)

The New York State Education Department is initiating a two-phase approach to utilize the RIATT@NASDSE Assistive Technology Training Program. In Phase I, approximately 100 training specialists from the State's Special Education Training and Resource Center network sites (42) will participate in a "general awareness" module. These specialists will then provide inservice awareness in their areas. The intent is to ensure that persons knowledgeable about assistive technology are available in all areas of the State. They can then help school personnel and parents understand the importance and value of assistive technology. The training specialists will also be prepared to direct school personnel to other expert resources within the State.

In phase 2, regional teams will be established to participate in the full range of courses available through RIATT@NASDSE. The intent is to establish and maintain regional expertise, which will then be available directly to districts and providers. Regional teams area expected to work directly with local Committees on Special Education (CSE's) to provide guidance and training on evaluation and recommendation associated with the IEP process as it relates to assistive technology.

In addition to those states currently implementing statewide training plans, there are other states who are at the design stages of a plan that would most compliment their system. These include Virginia, Mississippi, West Virginia, California, and North Carolina and the Bureau of Indian Affairs.

The acquisition of hard-to-find training in rural areas continues to be a challenge to professional development leaders across the country. The RIATT@NASDSE distance education program has proven to be an effective model for the delivery of assistive technology training to a large number of professionals at a minimal cost. Using the RIATT@NASDSE program, many states have realized the benefits of increased availability of training to rural-based professionals, reduced travel for participants and trainers, increased professional participation and communication, and greater coordination of services across the state. Only through the systemic use of such cutting-edge distance education programs can rural districts hope to provide the training and support their professionals need the most.

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USE OF SELECTED AVAILABLE TECHNOLOGY TO PROVIDE RELATIVELY INEXPENSIVE DISTANCE LEARNING COURSES ALONG THE TEXAS/MEXICO "BORDER CORRIDOR"

Previous concern for over-representation of minority pupils in special education classes has resulted in an emerging body of literature advocating special education programming that is sensitive to the needs of children who are culturally and linguistically diverse (e.g., Baca & Cervantes, 1997; Baca & Amato, 1989; Figueroa, 1989, 1990; Rueda, 1989). Among the factors that have exacerbated this problem are: (a) Bilingual/bicultural differences of Hispanic children from their mainstream cohorts (Baca & Chinn, 1982; Cummins, 1984); (B) lack of bilingual and/or Hispanic professionals (Brown & Minke, 1986; Fagan, 1988); (c) generally high attrition rates for minorities in undergraduate and graduate education programs (Howard, Pion, Gottfresson, Flattau, Oskamp, Pfafflin, Bray, & Burstein, 1986); and (d) lack of adequate
bilingual programming for handicapped Hispanic children (Baca & Cervantes, 1997).

As the population of minority pupils in our schools continues to increase (predicted by Chapa, 1990, and others), the need for special education personnel to identify and educate culturally and linguistically diverse exceptional (CLDE) students will also continue in direct proportion to student numbers. Indeed, continuing shortages of qualified personnel in special education have been declared a national emergency (American Association on Mental Retardation, 1989) and have been well documented in all areas of special education (Simpson, Whelan, & Zabel, 1993). In the early to mid-90s, the National Clearinghouse for Professionals in Special Education (1992) ranked "diagnostic staff" as fourth highest area of greatest need; the U.S. Department of Education (1996) continued to document this severe deficiency.

Texas, a state with a diverse populace and economy has the second largest Hispanic population (19%) in the nation. At its southern border, Mexico borders nearly nine hundred miles and provides a richness of culture and history referred to as the "Border Corridor." Unfortunately, a variety of factors, including geographical isolation, ruralness, ranching or agricultural based economy and overall poverty level combined with the mingling of the depressed economies of South Texas and Northeastern Mexico, tend to negatively influence the long-term availability of qualified educational personnel. Although the Hispanic population extends throughout the state of Texas, those counties having the highest concentrations, i.e., from 81% to 97% of Hispanics all fall within the southwestern quadrant of the state and comprise the "Border Corridor." According to the Texas Education Agency (1996), while minorities (of which Hispanics comprise the largest group) comprised 53.6% of the student population in Texas, only 10.2% of the educational diagnosticians were Hispanic. Of the latter, an unknown but an estimated significant number are essentially monolingual in English.

Along the lower "Border Corridor" (beginning approximately halfway along the Texas-Mexico border and extending to the Gulf of Mexico), a needs assessment completed by LEA Special Education Directors located beyond a half-hour's driving time from a university revealed that at least two educational diagnostician positions have gone unfilled for over a year due to lack of certifiable staff and there exists an anticipated need for an additional 41 diagnosticians, preferably bilingual, within the next five years (Hausman, 1997). Of the four universities within the lower Border Corridor, one has closed its special education program and another no longer admits new students into the educational diagnostician training program. The remaining two universities are both located within the lower Rio Grande Valley area at the tip of Texas, leaving several hundred miles along the border unserved.

Where possible, shortages in specialty personnel such as educational diagnosticians have resulted in issuance of conditional or emergency permits. However, due to the lack of university-based training programs within driving distance, most individuals find it difficult, at best, to obtain the necessary education to continue maintenance of these emergency permits. As a result, the Texas Higher Education Coordinating Board as well as the Office of the Texas Commissioner of Education have been encouraging the development of alternate strategies, including the use of distance learning. Hence the development of the proposal entitled "Distal-based preparation of educational diagnosticians serving in bilingual contexts," that resulted in an OSEP-funded personnel preparation project. The project, centered at the University of Texas at Brownsville & Texas Southmost College (UTB-TSC) and renamed Project DEED, Distance Education for Educational Diagnosticians, involves internet-based videoconferencing in combination with computer-based, multimedia learning modules, supplemented by CD-ROM based independent study units, field supervised and individually mentored practica as well as two campus-based summer training institutes.

Distance learning or education, alone, can no longer be considered truly "unique" as some form, e.g., home study, correspondence study, independent study or external studies, of delivering university-level courses have been in effect for almost 300 years (Spooner, Spooner, Algozzine & Jordan, 1998). Indeed, a quick ERIC search revealed 1,475 entries since 1992. Fully 25 of these entries involved distance learning over the internet. While many articles cited are theoretical in nature, many others report networks used to support comprehensive training programs in Hawaii (Meyer, 1995), Kentucky (Collins, Hemmeter, Schuster, & Stevens, 1996), North Carolina (Belk, et. al., 1995), Alaska (Starlings, Wheeler, & Porterfield, 1994), and Iceland (Myrdal, 1994). Current practices reported in the literature involve synchronous communication (e.g., two-way audio, two-way video in real time via streaming, or two-way audio, one-way video in real time) or asynchronous communication (E-mail list servers, chat rooms, etc.), using networked telecommunication systems as well as the internet to effect distance learning. Recent articles (Foegen, Howe, Deno, & Robinson, 1998; Spooner, Spooner, Algozzine, & Jordan, 1998) have offered reviews of the range of and relative efficacy of differing distance education approaches.

Although electronic distance education is not particularly new, it remains essentially an untapped resource. Most of us in small, rural and/or minority IHEs have had to find relatively inexpensive ways to enlarge our particular catchment areas to keep programs viable as well as provide needed services in the rural portions of our areas. In most cases, we have also had to "reinvent the wheel" on our own due, in part, to the competitive nature of IHE funding. Based on available literature, it would seem that the internet could prove useful as an inexpensive way to address distance education. The intent of this paper is to share the developmental steps (failures & successes) involved in the development and initial evaluation of a local, federally funded project focusing on presenting courses in special educational diagnostics to rural communities along the Texas/Mexico "Border Corridor" too distant from IHEs for teachers/aides to attend.

Development of an Idea

The closing of one of the four university-based special education programs within the South Texas Border Corridor exacerbated an already serious situation involving special education personnel shortages. Yet, at approximately the same time special telephone trunk lines, i.e., T-1 fiber optic linkages, were extended to all rural school systems in the geographic area. This, coupled with the recent development of economical audio/visual conferencing systems, e.g., CU-SeeMe (White Pine Software) and Microsoft NetMeeting, inexpensive videocameras, e.g., QuickCam VC (Logitech), as well as user-friendly multimedia production utilities programs, e.g., QUEST Net+ (Allen Communications, 1995), made it feasible to offer multimedia-based presentations accompanied by videoconferencing (with a choice of video and audio codecs for best performance over a variety of network speeds).

Previous experience along the Texas-Mexico border heightened an awareness that the dominant, traditional Hispanic culture found within the Border Corridor supports differing learning styles. An expanding body of recent research has identified preferred learning styles characteristic of Hispanic students (e.g., Dunn, Griggs, & Price, 1993; Griggs & Dunn, 1995; Jalali, 1988). Based on this research, teachers should expect larger numbers of Hispanic students to prefer a cool environment, conformity, peer-oriented learning, kinesthetic instructional approach, a high degree of structure or formal design, variety as opposed to routines, and a field-dependent (or group oriented, cooperative) cognitive style than their mainstream Anglo peers. While the majority of the learning styles research has focused on elementary or secondary students, postsecondary level research has begun. A current, ongoing research project exploring the preferred learning styles of college and university level Hispanic students has tentatively identified patterns of learning preferences similar to those found on the elementary and secondary levels (Hausman, 1998).

The QUEST Net+ utilities program chosen for use within Project DEED permits the combination of video clips, various illustration types, graphics animation, audio overlays, and text, all with preprogrammed instructions and, with the use of preprogrammed C language, into interactive multimedia modular units. These modular units are also designed to present over the internet (with participant/ student responses recorded on the sender server). The use of CD ROMs permit sharing high-security modules, e.g., specific diagnostic tests, via regular mail. The addition of videoconferencing in parallel with the multimedia modules will permit real-time voice communication with acceptable, though slower, video. The multimedia nature of the QUEST-based programs should fit the traditional Hispanic students' preference for structure as well as variety. When interactivity is built into the modules and combined with extensive workbooks to accompany each instructional unit, the reported preference for kinesthetic instructional approaches should also be addressed. The incorporation of videoconferencing, hopefully, should reduce the feelings of isolation and separateness from others in the project, feelings often reported in the literature. Provision of the professor's interactive "telepresence" should appeal to the traditional conceptualization of formal instruction and respect for authority often reported of traditional Hispanic students. Being able to call students by name, equally directing questions to the entire cohort and providing positive feedback and encouragement, we hope to be able to reduce the typical effects of absence of physical presence, e.g., a tendency to be distracted from a "talking head" or passivity.

Cooperatively derived ground rules will be required prior to the initiation of the internet based courses to manage the give and take between students and professor. Certain types of questions, for example, may need to be deferred to a chat room situation for a fuller treatment. Monopolization of conversation by certain students, lack of responsiveness by others, and even off task behavior may also need to be addressed within the ground rules established.

Approximately 8 to 10 distal sites will be established. Each site will consist of a cohort of 2 to 3 individuals working collaboratively as teams, separate from yet an integral part of the whole cohort of 20 students. They will be brought together for two summer institutes on the UTB-TSC campus (1999 & 2000) as well as be connected, for group projects, through the videoconferencing linkages, e-mail based communication, list servers and chat rooms. Collaborative interaction within the learning process will be emphasized.

Implementation of the Project

Acquisition of sufficient space to accommodate the technology and develop the requisite instructional modules or units is a major, initial need. Some universities maintain space allocation within a general or university-wide pool while others divide available space among various departments or divisions of the institution. The latter situation would seem to produce the most difficulty and delay in project initiation, particularly if your own department does not have sufficient free space. Previously allocated space, understandably, would probably not be easily obtained. The development of a series of computer-based multimedia modules requires extensive work space as well as storage space for layout, editing, testing, graphics production, and the ever present reediting. For our project, a classroom, normally accommodating 20 to 25 students, has been designated on the UTB-TSC campus. Anticipated is a four-year commitment for the life of Project DEED.

Technological infrastructure is also a major consideration prior to the initiation of such a project. Federal funding for Project DEED was requested on a shoestring basis; the negotiation phase further reduced the overall funds. As a result, the three computers in use derived from differing sources: my office computer was moved to the new room, the School of Education located a surplus PC, and the Academic Computing program volunteered a third. As a result, each of the faculty and staff have access to individual computers. As important, the room required extensive 'wiring' and the purchase of sophisticated switching devices to accommodate the technology and enable the establishment of clear, fast linkages to/from on- and off-campus sites. In our particular case, the cost of this was readily borne by a strongly supportive administration.

A team approach, involving many, if not most of your campus technology staff working closely with the project staff and other support personnel is definitely required to develop such a program. Initial installation involves the establishment of the requisite connectivity of the various computers, installation of new, speciality equipment (e.g., expanded memory, RAM as well as hard drive capacity, scanners, video capture cards, etc.), installation of software, and advice on implementation of distal site setups. Anticipated throughout the project is continued involvement in an advisory capacity as troubleshooters when the need arises. Such support is vital and needs to be established prior to the initiation of any distance education program. For Project DEED, we were extremely fortunate in the leadership and staff commitment offered by the Academic Computing program.

Staffing also needs to be developed within a team approach model in that each participant will need to wear many hats. Each of the three of us working within Project DEED have differing assignments yet, of necessity, we overlap roles with all of us developing skill in the construction of multimedia instructional units and skill in use of specific software. In our case, federal funds cover one-quarter of my time as Principal Investigator, 100% of the project coordinator's time, and 75% of the photographer/graphics artist/computer specialist's time. An additional one-quarter release time was also provided by the School of Education Dean for the principal investigator. Such time commitments need to be considered in program development as the conversion of standard, traditional lectures into true multimedia format requires an extensive amount of time. Our first semester on Project DEED focused on location and employment of project staff, staff training on basic equipment and requisite software, identification of and ordering equipment to be used for the project, as well as initial recruitment of the distal sites and cohort members. The first multimedia instructional units were not begun until the first of the Spring semester.

Acquisition of equipment also requires extensive team effort for involved staff as well as program consultants. Technology is continuing to evolve; what was "state of the art" when our initial proposal was entered into the federal competition was out of date or antiquated a short year later. As a result, on-campus technology specialists as well as additional knowledgeable contacts (e.g., the second author) provided a wealth of recommendations. Unfortunately, there was the occasional difference of opinion that required project staff to see additional information as well as a third opinion. Even then, some surprises occur. For example, instead of basing video imaging on the super-8 video system, digital video cameras with acceptable resolution began to fall within our funding range. Instead of VHS videotapes, we then needed digital cassettes specific for the camera. In addition, a player was recommended to avoid wear and tear occasioned by using the camera as a playback device. Conversion to digital format also required purchase of a digital capture card. (The non-linear capture card was still needed to convert the occasional VHS format information to digital format.) All of the above was agreed upon by our consultants and purchased. Only after receipt and installation of the above did we find out that it wouldn't work without a SCSI drive. This, in spite of the facts that our consultants had not mentioned the need, nor had the specifications provided with the digital capture card. Our recommendation is to determine what equipment is essential to a specific approach to distance education and then locate the equipment, determining availability of same on campus. Since Project DEED is committed to converting all presentations for 8 courses into distance education over the internet in multimedia format, we have broadened our dedicated equipment base through federal funding to allow a wider range of product, e.g., video clips of specific children/activities convertible into still shots which, in turn, can be converted to line drawings or sketches, with graphics animation added to enhance specific detail for instructional purposes.

Any innovative or novel approach always seems to encounter a variety of challenges. Our project is certainly no different. At present, field trials have been initiated with several videoconferencing systems, e.g., CU-SeeMe, Microsoft Netmeeting, Real Player. When the original project proposal was developed, commercial consultants assured the first author that they were able to combine, on a single screen at each distal site, both videoconferencing and multimedia training presentations. The price noted was 'well within reason with special educational pricing.' As it turns out, at least one such program, i.e., ClassPoint (White Pine), has been developed. Unfortunately, the educational cost for a 10 user bundle is around $5,100; a nice figure relatively speaking but beyond the budget capabilities experienced by many small, rural universities. Since the intent of our particular project is the demonstration of the use of inexpensive, readily available equipment/software, we are now exploring how to obtain the original effect of presenting multimedia modules simultaneously with videoconferencing. Options discussed thus far include software adaption, toggling between instructional module and videoconferencing, and employing two separate computers at both on-campus and distal sites, one for videoconferencing and the other for the instructional module. In addition, to avoid difficulty and delays associated with data transmission without videostreaming, the stand-alone, QUEST-based instructional modules will either be downloaded to each distal site prior to the scheduled class period or from a previously mailed CD-ROM. To assure the security required for the various psychoeducational tests, all test training modules will be converted to CD-ROM format for delivery to the distal sites. According to the project proposal, the multimedia instructional modules will be designed for both synchronous and asynchronous presentation. Synchronous delivery will be during a scheduled three-hour session held once each week of a regular semester, with the instructional unit running in parallel with videoconferencing. By adding the speaker's content in audio format while developing each instructional unit and providing a button to access the audio version, each module could also be available via asynchronous presentation. Asynchronous delivery was deemed important in the event cohort members miss scheduled sessions due to job-related conflicts as well as for use in the ongoing review process required of the cohort members.

Selection of any distal-based cohort would be unique to each situation. In our case, federal funds are available for up to 20 bilingual, certified teachers to cover cost of tuition and fees, texts and other materials as well as travel and state mandated per diem (food and lodging) for on-campus institute attendance. Identification of interested sites that can also provide the requisite on-site technology to participate as well as identify the cohort membership has, thus far, taken the most time and energy. At present, we are approaching the final selections. Once each course is converted to multimedia format and put into place with the project cohort, however, offering specific courses to other individuals employed at any LEA serving as a project site would be a relatively simple matter of locating sufficient numbers of interested individuals to 'make' a class and processing their own personal matriculation. The majority of courses involved in our educational diagnostician project are also applicable in the preparation of generic special education teachers, hence, an anticipated by-product of the grant will be the expansion of our overall special education program.

Conclusion

In spite of the various difficulties thus far encountered, the project has been able to meet its predicted deadlines. Field trials of actual delivery of the instructional modules in combination with distal videoconferencing will be initiated between on-campus sites, then presented as two sessions at an upcoming state convention for special educators meeting in a city some five hours drive from the UTB-TSC campus. By midsummer, conversion of the Fall introduction to special education course lectures should be completed. Each semester thereafter, module development will focus on each course scheduled for the following semester. As the project progresses and the various difficulties are resolved, dissemination of the 'resolutions' and additional recommendations will structured through conference presentations as well as our to-be completed WEB site.

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ASSISTIVE TECHNOLOGY
READY OR NOT... HERE IT IS!

What are you doing to assist students, teachers, and parents with understanding and implementing assistive technology? Due to the federal mandates of the Individuals with Disabilities Education Act (IDEA), many school districts are struggling with the practical questions of service delivery. How do you know when an assistive technology evaluation is necessary? Who is qualified to provide such an evaluation? What is the process for an assessment? What technology is available and how can the technology help students with special needs? How would you acquire equipment and make sure it will actually meet a student's educational needs? What kind of policy framework and administrative structure is needed? What resources are available? (Bowser and Reed, 1995; Office of Special Education Programs, 1997)

In Nevada, a framework is used by the Nevada Special Education Technology Assistance Project that provides an outreach program to share resources and build the capacity of local school districts in terms of assistive technology devices and services. The project is supported by discretionary funds from the Nevada State Department of Education. It is an example of what is working in a state where fifteen out of seventeen districts are considered rural. In Nevada, it is not unusual for a school district to have a small special education and related services staff. Additionally, it is not uncommon that the staff does not have specific background and or training in assistive technology. Therefore, when the district has a student with assistive technology needs, there is frequently a need for staff to seek assistance. In order to build the local capacity of school districts to provide assistive technology services, the Nevada Special Education Technology Assistance Project has facilitated the development of the Nevada Assistive Technology Consortium. Representatives from each of the seventeen school districts meet during the school year to share resources, work cooperatively on assistive technology issues, and develop individualized district assistive technology plans. As a result of this consortium, there are individuals within each district who can assist school district staff in the process of understanding and accessing assistive technology devices and services for students with disabilities.

Historical Perspective

The Nevada Special Education Technology Assistance Project began during the 1986-87 school year. During the late 1980's and early 1990's, an attempt was made by the Nevada Special Education Technology Assistance Project to involve special education teachers from around the state in specific training opportunities. At that time the population served dealt mainly with the low incidence populations and primarily with augmentative alternative communication. Training was offered to practitioners throughout the state, along with individual consultation support from the project's coordinator. This provided some pockets of beginning awareness in the use of a process to make assistive technology decisions for children with disabilities.

From 1994 through 1997, individual requests for assistance with assistive technology assessments and equipment needs increased. This was due to the recent innovations in educational technology and advances in the application for students with disabilities, and the new legal mandates. During this time, regional consultants from a few districts were given a limited amount of release time each year from their own district to assist another district. The release time was provided in exchange for assistive technology training at a national level, with expenses paid by the Nevada Special Education Technology Assistance Project. Regional consultants provided some training at the district level, but most of the support was provided to IEP teams on an individual case basis to provide an assistive technology assessment. The process of ongoing assessment and problem solving for solutions was difficult to maintain because school districts were often dependent on personnel outside of the student's school district. The need to build local capacity within each school district became apparent due to the increase in requests for assistance from the Nevada Special Education Technology Assistance Project, and the changes in the law. With the reauthorization of IDEA in 1997, each IEP team is required to consider assistive technology as a part of child's educational program on at least an annual basis. Administrators voiced concerns about the administrative structure, and level of expertise that would be required to support informed decisions regarding adaptive technology

In response to the needs of children, parents, special education staff and administrators throughout the state, the Nevada Special Education Technology Assistance Project developed an assistive technology consortium. The Nevada Assistive Technology Consortium has enabled school districts to develop a vision that is based on what we know from research and best practices. The consortium meetings are building the capacity of local school districts to address assistive technology needs of students. Participants are developing a collaborative team or network to share resources and develop individual district plans for delivering assistive technology services.

Philosophical Bases and Successful Strategies

Collaborative teaming is an integral part of the Assistive Technology Consortium meetings. Team building is extended beyond introductions and district updates, so that the consortium members experience activities that build trust, communication, leadership, and creative problem solving. This provides participants with skills to not only to actively participate in the statewide team, but also facilitate the development of cohesive teams at a district and school level as well. Collaborative teams and teaming processes are viewed as vehicles which bring people from diverse backgrounds together, so they may share knowledge and skills to generate new perspectives (Thousand and Villa, 1992). Collective problem solving acts to support students, parents, and service providers working toward common goals. Each team member's view is valued, and there is a shared responsibility to enhance services for children. Members of the consortium, have a network of resources available to them, so that district personnel do not feel isolated and alone in their endeavors to comply with legal mandates and provide appropriate services for children.

Through the consortium, the state of Nevada was able to move from an expert model of assistive technology service delivery to a collaborative model. The consortium participants developed the following mission statement to guide the vision:

- Understand IDEA and special education law relative to assistive technology.
- Develop statewide consistency of assistive technology policy and procedures.
- Serve as a statewide support system for networking.
- Increase district resources and provide knowledgeable leadership relative to team work, assessment, implementation and training for assistive technology.

Consortium participants view assistive technology to be one piece of educational planning which can be addressed within the existing IEP process (Bowser and Reed, 1995). The process for determining a need for assistive technology is driven by the student's educational needs, and guided by national trends and best practices (National Association of State Directors, 1998; Office of Special Education Programs, 1997; Wisconsin Assistive Technology Initiative, 1997). Decision making is based on a process of gathering information, creative brainstorming, identifying resources, and formulating a continuum of possible solutions and options that can be field tested. Each district is using research and best practices from the national perspective to individualize a plan for assistive technology service delivery that it will meet their district's need for providing services to children. The Nevada Special Education Technology Assistance Project facilitates continued training and technical support to the consortium participants to keep pace with the changes in technology and the applications for students with disabilities. To meet the identified needs of their districts, consortium participants initiate and plan future training topics. They are taking responsibility for the direction and content of the consortium meetings.

Today, the consortium is a network providing resources, support, and collective problem solving for assistive technology issues. This system has built the capacity of local school districts to meet the mandate of federal regulation in IDEA. Informed decisions about adaptive technology are making a difference in the education and quality of life for children with disabilities. The Nevada Assistive Technology Consortium participants feel positive about the direction of the consortium. Their comments show that they are more confident in understanding and implementing assistive technology. Additionally, consortium members are taking a leadership role in matching technology to student's educational needs, identifying available resources, and developing the framework for service delivery in their respective districts.

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DIGITAL AUDIO/VIDEO FOR COMPUTER- AND WEB-BASED INSTRUCTION FOR TRAINING RURAL SPECIAL EDUCATION PERSONNEL

Video presentations of teaching episodes in home, school, and community settings and audio recordings of personal views of parents and professionals can be important adjuncts to personnel preparation in practical professions such as special education. The use of media has been recommended as an effective strategy to accomplish three important instructional goals: 1) situated learning through the portrayal of the dimensions of the real world of professional practice (Todd, 1993; Willis & Meblinger, 1996); 2) anchored instruction to provide shared experiences for discussion and reflection (Brown, Collins, & Druguid, 1989; CTG-VLTC, 1993; Lave & Wenger, 199 1); and 3) exposure to a variety of diverse settings and perspectives (Barron & Goldman, 1994); McBride, Sharp, Hains, & Whitehead, 1995). Today's desktop computers allow any instructor to create original audio and video materials that can be tailored for a number of specific instructional uses (Howes & Pettengill, 1993; Richards, Chignell, & Lacy, 1990; Wagner, 1996). Nevertheless, to date most instructors have made little or no use of media in personnel preparation programs, whether at the preservice or inservice levels.

The revolution in desktop video production using consumer camcorders and personal computers has greatly simplified the preparation of audio- and video-based instructional materials. Any instructor, whether a classroom teacher at the elementary or secondary level or a faculty member working in an undergraduate or graduate preservice program or a staff development specialist designing inservice activities, is now able to shoot, edit, compress and format audio and video media for instructional use. The skills required to do this are well within the capability of most computer-literate people, requiring primarily an investment of time and energy to learn some basic techniques for digital video production.

Instructional Applications of Digital Media

Digital audio and video has many promising applications in the preparation of rural special education personnel. Audiovisual media have been used in creative ways for instruction: as material to supplement lecture and discussion as well as a primary delivery system fur courses; in preservice programs on campus and through distance education; and for inservice training and other staff development activities. Video segments are helpful for illustrating instructional and management procedures, for clarifying the context of classroom, home, and community settings, and for demonstrating teacher- students' interactions during instructional activities. Audio segments may be used to offer taped lectures, to present interviews with guests, or to share comments by experts. Digital media are readily incorporated into instruction via live presentations in person or on television, computer instruction through interactive multimedia modules, or Web courses with materials provided for distributed or distance learning.

Live Presentations. Digital audio and video are most often used for instruction in the context of live presentations made by an instructor to a group of learners. The capability of including media files is built into most presentation software, such as Microsoft Powerpoint, Gold Disks Astound, and Adobe Persuasion, which allow the user to link to audio or video files directly from a series of text screens. Such software ranges in price from $ 100 to $200. The media sound and images are played on the instructor's desktop or laptop computer and displayed to the group by means of a projection system and screen (in a live classroom) or via a television monitor (in a distance education program). The quality of the media will vary with the processing power of the computer and the compression scheme in which the media are prepared. Audio and video files played through a presentation program generally must be kept fairly short, usually no more than 5 to 10 minutes, unless large capacity storage drives (10 GB or more) are available, in which case files may be as long as 1-2 hours. The addition of audio and video media to a presentation program is a simple process that will readily be mastered by any instructor with basic computer skills.

Computer Instruction. Another application of digital audio and video is as components of computer instruction, generally designed as one or more self-study modules. Authoring software such as Macromedia Authorware and Director, Clari'Hypercard or Asymmtrix ToolKit may be used to create interactive multimedia learning materials (combining text, graphics, audio and video resources) that the user can access with a personal computer (Thibodeau, 1997). Such software ranges in price from $500 to $1000. The program (along with the sounds and images) is accessed from a storage device such as a compact disk or CDROM (650 MB) or an optical cartridge such as a Jaz drive (I and 2 GB) and played on each learner's desktop or laptop computer. The quality of the media will vary with the processing power of the computer and the compression scheme in which the media are prepared (Shaw, 1996). Audio and video files played through a multimedia program generally are often limited to 2 to 5 minutes in length because of storage constraints, with a CDROM holding up to one hour of video or 16 hours of audio (Florio, 1997). In creating media files, the instructor must consider the computer platforms and audiovisual player software that users are likely to have available. Apple's Quicktime audio and video files are most widely used because of their cross-platform compatibility. Basic authoring programs such as HyperCard are simple to learn, although more complex programs like Director have a steep learning curve and require a higher level of computer literacy and greater time and energy investment. However, the inclusion of media files in most authoring programs is quite easy and utilizes the same skills as those needed for adding media to a presentation program.

Web Courses. Many instructors are becoming interested in the development of Web courses, another growing instructional use of digital audio and video media. Instructors can use Web design software such as Adobe PageMill, Microsoft FrontPage and Clari'HomePage as well as Adobe Cyber Go Live and Macromedia Dreamweaver, to convert text, graphics, audio and video files to HTML code for use on the Web (McClelland, 1997). Such software ranges in price from $ 100 to $300. The completed course with all media resources is stored on a special computer known as a server which learners access by means of an Internet service provider in a laboratory or at home using a personal computer equipped with Web browser software. To view audio and video files on the Web, the user must have special media player software, which may be included as part of the browser or may be available as a plug-in feature. Because of Web bandwidth restrictions at the present time, audio is of adequate quality but video is usually of poor quality (Johnson, 1997). Video is limited to an image that plays in a window of 1/4 screen size or less at a rate of 10- 15 fps, appearing distorted and jerky, with frequent lack of synchronization between sound and picture. Both audio and video files may be made available for downloading (transferral to user's computer for later playback) or streaming (immediate playback using a special buffer) (Davis, 1999). It is helpful to select file formats that are widely available, such as Apple Quicktime and Real Network Real Audio /Video or to create self-extracting files with a program such as GEO Emblaze. Instructors will find it relatively easy to add audio and video files to Web design programs, although the use of streaming video may require some additional effort.

Selecting and Purchasing Audio/Video Production Components

The first step in producing audio and video media for instruction is determining what computer hardware and software and which camera, tape, and accessories best fit the instructor's development capabilities, instructional goals and equipment budget.

Camera Equipment. The best camcorder that is available or affordable should always be used because the more accurate the original image/sound, the better the final production will be (Rose, June 1998). The camera's lens determines the amount of the image that is captured. The larger the lens, the greater its magnification power, and the better the image. In addition, the greater the zoom capacity, the closer to desired image, and the more the control over what aspect of the image is shown. The camera head contains the electronic mechanisms (referred to as "chips") that capture the image. The larger the size of the chips, the more light is recorded, and the better the contrast and depth; 1/2" chips will produce a better image than 1/3" chips or smaller. The greater the number of the chips, the better the resolution, and the truer the color; three chips are better than two and both are better than a single chip. The recorder transfers the image and sound to a videotape cassette. The wider the tape, the greater the density of information that can be recorded, with tape varying from F (for professional cameras) to 1/2", 1/4" and 1/8" (for consumer models).Some cameras also have special features that can increase their usefulness, such as a shot stabilizer (which reduces shakiness in hand-held work), HiFi stereo audio (which permits recording of more than one channel of audio), or external microphone jacks (which allow the use of additional microphones directly on or in front of speakers). The type of the tape also affects image/sound quality. Generally, metal particle tape is superior to oxide tape, and name-brand tapes are often superior to less expensive tapes. Although high quality consumer analog video cameras (such as Hi8mm or SVHS) can be used for desktop video, the sounds and images must be converted to a digital signal as they are transferred to the computer for processing, with some loss of quality. The newer digital video cameras such as the Sony DCR-VX1000, Panasonic DVCPRO, and Canon XL1 record all sounds and images directly as a digital signal, avoiding any quality loss and simplifying the transfer process, a significant advantage. Digital camcorders range in price from $1500 to $4000.

Camera Accessories. The quality of sound and images recorded with a camcorder can be greatly enhanced by the use of some affordable sound and lighting equipment (Sauer, 1996). The accuracy and quality of recorded sound varies with the type of microphone used, as well as the distance between the source of the sound and the recording device, termed the "signal-to-noise ratio". The broader the scope of the microphone's sound collection, the less faithfully it will portray a single sound. The greater the distance between the source and the device, the more extraneous noise will be recorded to produce distortion. Therefore, the rule in audio recording is to locate the microphone as close to the speaker as possible and to use a microphone designed to maximize the desired sound as well as possible and minimize other sounds (Rising, 1997). The microphone on most camcorders is generally of low quality and positioned too far away from the speaker to record sound well. So it may be desirable to take advantage of the external microphone jacks on the camcorder. A small lavalier microphone can be clipped to the speaker's lapel or shirt just below the mouth and wired directly to the camera or to a wireless unit to allow movement. A boom microphone positioned on a pole can be extended over a group of speakers and redirected toward each person's mouth as he or she speaks. An inexpensive lavalier microphone wireless system is available from Sony for around $100. Since room lighting is often dim or displayed in the wrong direction, it can also be helpful to use additional lights to highlight the focus of interest. Affordable professional lights are available from Lowell for $150 apiece; each fixture includes a telescoping stand and metal shades (known as "barn doors" that allow the light to be directed more precisely. Inexpensive halogen lights (either floor models or hanging work lights) purchased at the local hardware store may also be used for lighting scenes. It is helpful to place at least one light to illuminate the subject's head and shoulders to separate him or her from the background to some extent. It is also important to avoid shining the light directly on the main area to prevent glare.

Computer System. The quality and capacity of the computer system to be used to process the audio and video files will determine not only the quality of the finished product, but also the ease with which it is prepared (Sauer, March 1997). Capture and editing systems are available in a wide range of prices for both Macintosh and PC platforms, but many video professionals prefer Macintosh computers because of their superior handling of graphics and video. The desktop computer's Central Processing Unit (CPU) needs to be powerful enough to handle the large file sizes needed for audio and video with relative speed. The CPU should have a minimum of 200 MHZ with at least 40 MB RAM machine memory. The system should have a color monitor that is at least 15"; a 17" monitor is preferred and even larger monitors may be desirable for more complex editing tasks. An appropriately equipped computer is likely to cost $3000 to $5000. It will be necessary to install a video capture board to allow import, processing, and export of sounds and images (McMahon, 1998). Analog video boards, such as Apple AV (available in AV-equipped Macintosh computers only), Truevision Targa, and Video Toolkit, typically range in price from $250 to $5000. The newer digital boards, including Apple "Firewire" , DPS Spark, Radius MotoDV, and Pinnacle MiroMotion, typically cost $250 to $ 1000. Appropriate cable must be purchased to connect the camcorder or other recording device to the video board to transfer the sounds and images from the tape to the computer.

Production Software. The type and variety of software needed will depend on the complexity of the video productions desired. Fairly simple video and audio segments are easily produced with basic editing software, while more elaborate productions that involve text and graphics, special effects, animation and compositing will require the use of multiple applications. Video editing software allows audio and video materials to be selected, sequenced, transformed in various ways, and compressed, all in the same program. The leading program is the cross-platform Adobe Premiere, but programs like Strata Videoshop, and Avid Cinema also can be used on the Macintosh, while FastVideo and Speed Razor are available for PC users. Editing programs typically cost anywhere from $250 to $1000, depending on their features. If additional special effects are to be added to the video, software programs that create these components must also be purchased, unless they are included in the editing program (many are). Programs such as Adobe Photoshop and Illustrator, Corel Draw and Paint, and Macromedia Freehand are used for designing text and graphics, while programs like Adobe After Effects and Boris Fx are used for animation and compositing. Each of these programs ranges in price from $200 to $1000.

Tips for Selecting Components. Instructors who are preparing to select and purchase audio and video production components are advised to learn as much as possible about their needs and available options before making the final decision. Information about computer hardware and software can be easily obtained by checking distributor catalogs, visiting company Web sites, and consulting trade magazine reviews. It is also helpful to consult with others who have used specific products, especially for information about user friendliness and system compatibility.

Recording and Editing Audio and Video Segments

The next step in producing audio and video media for instruction is carefully planning and executing the activities associated with recording and editing segments to insure that segments collected will contain high quality images and sounds and will accurately represent the content.

Planning Media Segments. The instructor will first need written permission to videotape in the desired school, home, or community settings. This is best accomplished by contacting the individual or agency and requesting a letter of permission as well as asking all persons who appear in the videotape to sign release forms that allow their image and voice to be used. Then the instructor will need to determine the best times for videotapng to be scheduled, depending on what activities and people must be included, minimizing as much as possible any interruptions or problems. Once the location, timeline and events have been decided upon, the instructor should survey (or "scout") the location to identify any problems. The instructor can look for sources of "audio noise" (continuous sounds such as machines and electrical interference as well as intermittent sounds such as announcement systems or ringing telephones) as well as "video noise" (distracting patterns such as busy backgrounds as well as random movements such as people passing by) that may lower the quality of the recorded sounds and images. Then steps may be taken to reduce or eliminate "noise", such as unplugging machines or turning off lights that hum, replacing wall hangings or blocking passageways. At this time, the instructor can also prepare the people (or "talent") who will be videotaped to discuss their role and or rehearse their performance (Cauttero & Danese, 1997). It is also helpful to provide talent with advance information, such as a list of interview questions and instructions for dress and grooming.

Recording Media Segments. Determining the focus of interest in each activity to be recorded (for example, the face during a personal interview, the hands during a demonstration, or the interaction between instructor and learner in a teaching episode, is critical to making decisions about how best to arrange the scene and equipment (Ozer, 1998). The camera should be located to get the best shots of the main action, with an appropriate background that is neither busy nor flat with minimum "noise". Positioning the camera on a tripod insures better shooting; if handheld shooting is necessary, the camcorder may be held close to the chest, using the elbows against the sides to form a natural tripod. The instructor should place the camera as close to the action as possible to minimize the need to zoom (move in and out) or pan (move side to side) because these moves create problems in compression. The microphone(s) should be placed directly on the chest clothing of any speaker(s) on the body plane directly aligned with their mouth(s); wireless microphones should be used if the speakers will need to move around (Rose, February 1998). The instructor should ask the speaker to say something and record a few words to insure that the levels are high enough and the microphone is working. If needed, one or more lighting fixtures should be placed so that the light illuminates the action, casting soft shadows to the side and behind and avoiding any hot spots in the image. The instructor may want to place transparent fabric in front of the light to lessen the glare and produce a more natural image. Once the lighting is in place, the camera's white balance setting should be adjusted as needed to guarantee color accuracy. Shooting should proceed according to the establishing sequence: a wide shot to set the scene; medium. shots as needed to draw interest to the action; and close-ups as appropriate to focus on key points (Hampe, January 1998). Shots should be composed to reflect their display on television screens and/or computer monitors, which have a 3x4 aspect ratio on a horizontal plane (sometimes called "landscape view"). Framing should create a balanced organization, locating the focus of action in the center, speaker eyes on the top third lines, titles on bottom third lines ("rule of thirds"), speaker nose just off center ("lead room") and speaker top of head just under the top of the screen ("head room"). Instructors should follow the general principle of "shoot for the edit" to insure that they return with the sounds and images that will enable them to create a high quality media production.

Editing Media Segments. All audio and video recordings should be reviewed during the transfer process so that the instructor may select the specie clips that are most likely to be used, saving disk space and simplifying the editing process. Most editing programs have a basic logging feature that allows clips to be labeled and notes to be added (Feeley, 1997). As the clips are digitized (on an analog video board) or transferred (on a digital video board), they may be stored in file folders (sometimes called "bins").

according to subject or scene. This log or "shot list" should be as accurate and informative as possible. Careful attention to labeling and storing media files saves time and trouble in editing the project at hand and also creates an archive system that can be used on future projects. Clips may be digitized or copied as they are selected or they may be selected and then processed as a whole at a later time (known as "batch digitizing"), which saves time because it can be done by the computer without supervision, except when multiple tapes are used. Once all clips have been stored, the instructor should open a project timeline in the editing program and drag the selected video and audio clips to the designated track, placing them in the desired order. Some instructors will find to helpful to develop a script (written outline) or storyboard (thumbnail sketches) prior to this step to guide them in selecting and ordering clips (Putnam, 1997). After two or more clips have been sequenced, the instructor should use the preview function to view the result and determine if any fine tuning is needed. Sometimes clips need to be trimmed, that is, modified slightly at the beginning or end to eliminate strange sounds or awkward positions. The audio and video segments need to match or be "in synch" so that what is heard occurs at the same time as what is seen and the content is consistent. Poor quality audio, such as low sound, distortions, or extraneous noises, may benefit from additional audio editing (called "sweetening") *Shaw, 1997). Once the final sequence is satisfactory, the instructor may add any special effects, such as music, text, graphics, animations or composite, layers.

Compressing Media Segments. Compression of media segments is necessary to manage audio and video files for storage and playback on a personal computer. Various compression algorithms can be used to eliminate redundant information and reduce file size (Hampe, August 1998). One minute of compact disk quality audio requires 5 MB of storage space, while one second of broadcast quality (full motion/full screen) video requires 22.5 MB of space (Azarmsa, 1998), so some degree of compression is essential. Compression may be accomplished directly through the editing program or it may be done in a separate program (Capper, 1998). The older Cinepak format produces extremely small, but low quality files, but is generally not needed with today's more powerful computers. The newest Sorenson format now available through Apple Quicktime or Terran Interactive Media Cleaner Pro offers better quality at a reasonable file size. The alternative high quality MPEG1 format produces the highest quality image at the smallest file size and is now easily produced using Heuris Power Professional encoding software. To compress and audio or video file, the instructor selects the type of video file (Apple's Quicktime for both platforms, Microsoft's AVI for PC only) with consideration for the hardware and software on which the user will play back the media files. Successful compression achieves a good balance between high quality sound/image and small file size that is appropriate to the content.

Incorporating Audio/Video Media into Computer- and Web-based Instruction

The final step in producing audio and video media for instruction is using software to incorporate the media files into a particular application such a live presentation, computer-based instruction, or course materials delivered on the Web.

Using Media in Presentations. Most instructors will want to use audio and video media in the context of a presentation program, such as the widely used Microsoft Powerpoint, which is designed to include media along with text and graphics in a series of slides (Hampe, 1997). To add media to a presentation, the instructor first creates a text screen with the desired heading and content. Then the instructor accesses the menu command to insert an audio or video clip and selects the desired file by name. It may be necessary to consult the manual for the presentation program to determine which audio and video file formats can be used. If the existing format is not compatible with the program, it may be necessary to use a file conversion program to create the need format before selecting the file to insert. Once the selection has been made, the audio or video file will automatically play as soon as the text screen is accessed. To delay playback, the instructor can also create a new text screen that contains the audio or video file only, then add a button to the original text screen to link to the video. It is important to remember that media files used in a presentation program do not become a part of the program; rather, the program searches for and opens them from another location on the desktop. Thus, the instructor must make sure that all audio and video files that accompany a presentation have been loaded onto the computer from which the presentation will be displayed.

Using Media in Computer Instruction. Some instructors will be willing to learn a simple authoring program such as Macromedia Director to use audio and video media in the context of interactive multimedia self-studies modules administered to learners individually by computer (Roberts, 1995). To add media to a multimedia module, the instructor first programs a frame (sometimes called a "card") that contains desired text or graphic content and navigation aids for user interaction. Then the instructor accesses the menu command to import an audio or video clip and selects the desired file by name. The media file format chosen will depend on the platform and media player software likely to be available to users; it is advisable to use cross-platform formats whenever possible. Once the selection has been made, a dialog box will appear to allow adjustment of playing characteristics of the media (such as immediate versus delayed playback or continuous looping or options for interruption). Media files used in an authoring program are stored along with the program and subsequently to each user's copy (Stem & Lettieri, 1996). When the final version is ready, the multimedia program is transferred to some portable storage medium, such as an optical cartridge or a compact disk (CDROM). The program is then packaged and distributed to learners, who play the program and its media files on a personal computer.

Using Media in Web Courses. Many instructors are using a Web design program such as Adobe PageMill to incorporate audio and video files as resources for Web-based courses (Leland, 1997). To add media to a Web course, the instructor first creates a page with the desired heading and content. Next, the instructor decides whether the media will be available as a downloading file (for transfer to and later playback on the user's computer) or a streaming file (for immediate playback on the desktop). No special processing is necessary for downloading files, but additional coding will be needed for streaming files. In either case, the media file format chosen will depend on the platform and media player software likely to be available to users; it is advisable to use widely available formats whenever possible. Then the instructor accesses the menu command to locate an audio or video clip and selects the desired file by name. If the file will be downloaded, no additional steps are taken. If files will be streamed, the instructor will need to write additional HTML source code or use other encoding software to prepare them. When all Web course resources have been assembled, the instructor publishes them to a server, a computer equipped with sufficient storage space and processing speed as well as special server software that will distribute files to users on demand (Cooper, 1999).

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CULTURE AND SCHOOL SUCCESS: DEVELOPMENT OF A DOCUMENTARY-STYLE DISTANCE EDUCATION COURSE

> *When there are walls of ignorance between people, when we don't know each other's stories, we substitute our own myth about who that person is. When we are operating with only a myth, none of that person's truth will ever be known to us and we will injure them – mostly without ever meaning to. What assumption did you make because she is a woman? What assumption did you make because he is Black? What myths were built around the neighborhood listed on the application? What myths were built around the employment of the father or absence of the mother? What story did we tell ourselves in the absence of knowing this person's real story?*
>
> Paula Lawrence Wehmiller
> (Harvard Educational Review, Fall 1992)

American society is becoming increasingly multicultural. U. S. Department of Education (1998) statistics indicate that the percentage of White, non-Hispanic students decreased by 11.2% from 1976 to 1995. Conversely, the total minority student population increased by 11.1% over the same time period. The teaching force in the United States, however, does not reflect these demographic changes. Williams (1990) found that 90% of public school teachers are Caucasian, and that only 7% are African-American and 3% are from other minority groups. U. S. Department of Education (1994) projections indicate that by the year 2000 the percentage of minority educators will drop to 6%, although minority student populations are predicted to continue growing. What are the implications of these contrasting demographics?

For many minority students, particularly those characterized by sociologist John Ogbu (1992) as involuntary or caste-like minorities, the implications include alienation, disproportionately high dropout rates, over-representation in special education, and generally higher instances of life problems and lower instances of life successes. American Indian students, in general, fit this description. The Final Report of the Indian Nations At Risk Task Force states that, "Our schools have failed to nurture the intellectual development and academic performance of many Native children, as is evident from their high dropout rates and negative attitudes towards school" (U.S. Department of Education 1991, p. 1). Data gathered as a result of this report identified multiple issues regarding the training of teachers, cultural differences in the non-verbal regulation of classroom interaction, culturally appropriate curriculum, and psychoeducational assessment measures and practices. In response to this report and the growing concern in Utah for the educational needs of American Indian students, the Department of Special Education at the University of Utah developed, with the assistance of federal grants, a graduate program designed to prepare teachers to work more effectively with these students. The program included four courses offered during summer quarter sessions. Faculty from Special Education, Educational Studies, Educational Psychology, and Ethnic Studies collaborated in the development and implementation of this program of study. The purpose of this paper is to describe the creation of a documentary-style, video-mediated distance learning course called "Culture and School Success" that, with solicited input from an American Indian advisory board, synthesized content from the four on-campus courses.

Course Development

In 1997, the project developers applied for and received funding for a curriculum development effort sponsored by the Utah System of Higher Education under a Technology and Distance Education Initiative. The course to be developed was conceptualized as a graduate level course that would be available in both pre-service and in-service contexts to educators in both urban and rural/remote parts of Utah. A model utilizing stand alone video modules with printed support materials and an on-site facilitator was selected. This "Professor Plus" model (Sebastian, Egan, Welch, & Page, 1996) has been used extensively in the rural, distance education program of the Department of Special Education at the University of Utah. The modular format is cost effective and flexible because it allows for periodic updating and refinement.

In conceptualizing the course, the project developers were adamant that a documentary format be utilized in which American Indians and other professionals would be provided the opportunity to share their experiences in their own words. Far too often, the lived experiences of individuals from marginalized groups have been filtered through the cultural lenses of members of the dominant culture. A general misperception of American Indians persists that is rooted in images from the 19th century which has perpetuated many false stereotypes. In fact, there are currently over 2.3 million American Indians affiliated with 557 tribes (Peregoy, 1999; Russell, 1997). Each tribe has its own distinct culture and traditions. Individuals may fall anywhere on a continuum from traditional to mainstream. The purpose of selecting a documentary format for this course was to allow people to tell their own stories in their own words. The circle was chosen as the culturally relevant metaphor for the course. In many American Indian cultures the circle represents the balance of life, as all things important to maintaining life fit somewhere on the circle. By touching one part of the circle, all parts are included. It was found that the metaphor used to address the issues of the course also applied to the development process in creating the distance education course (Herbert, Mayhew, Sebastian, 1997).

Design Process

It was clear from the initial proposal that the project would need extensive technical assistance. Therefore, support from an instructional design team and resources for multimedia development were built into the proposal. The four faculty members who served as content specialists were provided with either released time from other course assignments or stipend support. An American Indian graduate assistant was selected to help obtain and organize course support materials. Two additional faculty members, involved in the distance teacher education program in the department, completed the project development team. A total of ten individuals with divergent backgrounds and experiences were directly involved in the development and production of the course. Each person had a different role, responsibility and expertise to contribute to the process, including: distance education specialist, syllabus designer, video producer, world wide web consultant, copyright research specialist and content specialists in the fields of Indian education, special education, educational psychology, and ethnic studies. Coordinating the activities of the design team, particularly at the beginning of the project, became one of the greatest challenges of this project (Gibson, Sebastian, Herbert, & Mayhew, 1998).

In order to successfully communicate and produce what you set out to produce, it is essential that the development team have a shared vision of the finished product. The team needs to come together to develop a shared language to be able to communicate with one another about all aspects of the project. Individuals involved in the process often have different world-views and perspectives in terms of the design, development, production and implementation process. By involving development stakeholders in the design process, needs, frustrations and alternative solutions can be addressed (Carr, 1997). It is essential that the design effort be interdisciplinary in nature. It is unlikely that any one person will be a specialist in all media and content areas to be covered in the process of developing a successful course (DeBloois 1983, cited in Romiszowski, 1986).

Some faculty members may be resistant to this collaborative model, however. The higher education culture places great emphasis on ownership of intellectual property, student credit hours and revenues from the completed course. These issues must be addressed prior to starting the project. The most important pre-requisite for faculty involvement, regardless of the political landscape, must be the motivation to create an effective instructional environment for the learner. With this as a common denominator among all team members, all other logistical problems are more likely to be solved through effective communication.

The tool for communication in this production process is the instructional design, which should be developed collaboratively. Team members' experiences, revelations, and enthusiasm for the project need to mix together through time in order to find solutions to instructional challenges. Therefore, time must be allowed in the design process for breathing moments, reflection, and review. The process should be flexible, keeping the learner as its focus and ultimate beneficiary. Instruction can only benefit the learner, however, if it is implemented. Therefore, the team must accomplish stages of design, development, and production within the context of production timelines, grant funding periods, and academic calendars. To insure that no step is left undone, instructional design systematizes the process, but it should not take the creativity and flexibility away from the design team. The process should give the team freedom for creativity by taking away the stresses that come from last minute production issues.

To assist the design process an instructional designer facilitated a series of large group brainstorming sessions. This person utilized a systematic approach to the design process (Gustafson & Branch, 1997; Romiszowski, 1986) to insure that all aspects of the project were thoroughly thought out before the production process began. The following four stages of design were addressed in developing the course.

Stage 1 - Course Parameters

In the first stage of development the team outlined all of the influencing factors in the course as well as the overall goal of the course. This provided a common vocabulary to describe the problems and the solutions:

- Who will be taking this course?
- Where will it be taught?
- What technical limitations will the students have?
- Can the material developed for this course be used in any other ways?
- Why are we offering this course?
- In what specific way will this course meet the challenge?
- How much money do we have to work with?
- When will the course be implemented?

This type of analysis is helpful in making the tough decisions of what to include and what to leave out. Many of the issues discussed at this stage are often overlooked because team members may assume that everyone is starting from the same understanding of the project. However, with a diverse group of people it is risky to make such assumptions. What may seem trivial in the beginning could become a major production problem later in the process.

Stage 2 -Content

During this stage the knowledge, skills and attitudes needed by the learners in order to achieve the overall goal of the course were identified. The ultimate objective was to define the knowledge gaps between where the students start the course and where they need to be after instruction. From this information a set of learner outcomes were developed.

Stage 3- Scaffolding

In this stage, the team identified the best way to meet the learner outcomes defined in stage 2. The goal was to chunk the concepts in a way that built a scaffold of superordinate and subordinate concepts linking prior knowledge to new knowledge (Pressley & McCormick, 1995). The course content chunks were pulled into a sequence by the team. In order to illustrate these sequences, lists were put up on walls to help the group visualize the structure of the course. As outcomes were developed, the sequence was reorganized in a manner that best met the scaffolding needs of the instruction. This scaffolding had to fit within the confines of the University imposed semester system, 15 two-hour sessions. The team then identified the most effective way to achieve these outcomes by deciding which medium would best address each concept while keeping the learner engaged and motivated in the process.

Stage 4 - Media Element Design

At this stage the team set realistic expectations about the production timeline and costs. Once a specific list of media production needs was identified, it became easier to determine what already existed and what needed to be produced. Valuable production time and money could be saved by using segments already available. The production outline also facilitated more involvement from the community in finding resources for the production. During this stage, the team identified subject matter experts for each produced element and assigned those elements to a faculty member who served as the production team's contact point.

Although the process has been described in stages it is by no means linear. With a diverse team it is important to take a more iterative approach to the process, allowing the team to construct and deconstruct the design. A total of eight all-day meetings over a period of two months were needed to develop the course. Due to outside commitments, not all of the design team participated in each meeting. Therefore, throughout the process the team would need to go back and evaluate what happened during the previous session, deconstructing and reconstructing the work. By keeping the work done to date visible to the team via white boards and paper post-ups, the faculty was reminded of content already covered which helped to keep the team on track. However, it was sometimes difficult for a faculty member to let go of a specific content area and to move on in the course.

Since the course addresses the concerns of an under-represented segment of the community, it was seen as particularly important to solicit community involvement. An advisory board comprised of leaders in the field of American Indian education, school district personnel, families, and tribal representatives was formed to provide additional oversight of the course content and to help with the identification of resources. The design team felt very strongly that regular interaction with the advisory board would be important for the quality and integrity of the course.

Course Production

Once the content of all sessions was determined, it was time to plan for the actual production of the course. With great assistance from the advisory board and content specialists, the specific sites for video acquisition and individuals to be interviewed were identified. Overall, a total of 163 individuals were interviewed, including 115 American Indians representing 22 tribal affiliations. Location shooting was conducted in Montana on the Flathead Reservation, in Idaho on the Shoshone and Bannock Reservations, and in Utah on the Uintah-Ouray Ute Reservation, the Navajo Nation, and in Salt Lake City and San Juan school districts. In addition, several interviews were videotaped at the American Indian Resource Center on the University of Utah campus.

Before any videotaping was conducted, however, cultural awareness training for the production crew was provided by one of the content specialists and two members of the advisory board. This training included information concerning communication styles and issues related to American Indian education. This training proved to be very valuable. The video crew worked with respect, dignity and pride. Kristy, our producer, was awarded a prized necklace by a Native elder for her work as a young female warrior. Gary, our video cameraman, was invited into a Navajo medicine man's hogan to film. Much of the credit for our success on this project is due to the competent and caring video production crew that worked with us.

Shooting Schedule and Other Considerations

Videotaping started in December 1997 and was completed in early April 1998. Before any shooting could be conducted, however, much preparation work needed to be done. Once the locations and individuals had been identified, it was necessary to develop a shooting schedule. Shooting dates were limited due to budget constraints and prior commitments of the video production crew. Travel arrangements were made and interview schedules were developed. It was helpful to identify a primary contact person at each site. Each person interviewed was required to sign a release form giving permission to use that person's image and voice for the purposes of the course. For children under the age of 18, parental permission was required prior to shooting.

Even the best plans, however, sometimes do not work out. Problems encountered during the acquisition phase included interview no-shows, inclement weather, vehicle breakdowns, and a malfunctioning video camera. A complete day's footage and a planned three-day shoot had to be scrapped when a computer chip in the video camera went bad. A re-shoot was scheduled, but some individuals were unable to participate due to prior commitments.

The Interviews

Documentary is a form of story-telling; due to time constraints it can be nothing else (Kriwaczek, 1997). Because of time limitations, it is important to determine which people are the most knowledgeable and open (Rosenthal, 1990). They may be technical experts and authorities, or ordinary people who have undergone the experience that is being documented. According to Rosenthal, when you conduct interviews you are not aiming for balance, you are aiming for the truth. You are not just collecting facts about a subject, but trying to gain a perspective that goes beyond the facts. Therefore, it is essential to begin with a set of purposeful questions, but to also be open to the stories that emerge. These stories may be more powerful than any of the facts that you uncover.

Of major importance to our model was that story telling is implicitly culturally appropriate and consistent with our expressed goals of not only telling their story in their own words, but also in their own way. It was risky in time and money, since we could not predict or script our time as we might like. However, this was essential in order to gain trust with a population that has not fared well, historically, with the media. We relied on early informants to tell others that we were honest and that their voice would be heard without cutting them off. This approach enabled us to interview many Native individuals, including several non-English speaking Navajo elders and a Navajo medicine man, who otherwise may have been reluctant.

When conducting the interview, it is important to put the subject at ease. The goal is for the subject to provide open and articulate responses to your questions. The interview set, with bright lights, camera, camera operator, sound person, grip, director, and interviewer can be very intimidating. It is helpful to establish a rapport with the subject by making sure that she or he is comfortable and by starting out with fairly general questions. It also helps when the interviewer is calm and relaxed. The interview, itself, is unrehearsed and unscripted. As noted above, the interviewer is prepared with a list of purposeful questions, but the interviewer does not know exactly how the subject will respond to those questions. An alert interviewer will improvise appropriate follow-up questions to prompt the subject to respond with clarity and thoroughness.

Background Footage

The old saying goes "a picture is worth a thousand words." For that reason, documentaries rely on carefully selected background footage (aka "B-roll"). B-roll is used to add emphasis to the words that are spoken by the subjects, and to create an image in the minds of the viewers. For example, when a subject is discussing the importance of technology in education today, the producer would overlay footage of students working on computers. This not only serves to reinforce the points the subject is making, but also creates a more visually pleasing experience for the viewer. Overall, the interview content drives the B-roll. After the interview has been videotaped, the producer and the project directors would identify B-roll shots that would support the content of the interview.

Post Production

Video Module Production

Approximately 70 hours of video footage were acquired. The next challenge was to condense this into 15 one-hour sessions. In order to create a consistent "footprint" for the video sessions, one project co-director was designated to work with the producer to develop the finished videos. The session scripts that were developed the previous summer by the course development team served as blueprints for each video session. On a few occasions, some of the scripts needed to be modified due to the footage that had been acquired, and two sessions ended up being condensed into one. Due to availability of the editing equipment, the producer and project co-director often put in long hours late into the evening and on weekends. Editing began in late spring 1998 and was completed in December.

In addition to the actual video interviews and B-roll footage, other elements were included in the finished product. Original Native flute music was created for this project through a trade arrangement with a local American Indian flutist. Additional music was identified by a member of the advisory board who hosts a weekly Native music program on the local community radio station. Original artwork was commissioned in order to present a consistent visual theme throughout the video sessions and the printed support materials. Much research was conducted to locate archival photographs, and existing video footage. Of course, copyright clearance was needed before any preexisting media could be included in the finished product.

Support Materials

An important component of effective distance education courses is well-developed support materials. The second project co-director was designated to take the lead on this task. As video sessions were completed in the editing process, the support materials would be developed. These consisted of a facilitator guide and a student guide. The purpose of these guides is to serve as an advance organizer to assist the on-site facilitator and to prompt the students to look for important points made in each video segment. The team wanted to develop an interactive structure that presented a concept or event via video and then utilize breakout activities to engage the learner. The purpose of breakout activities is to allow the learner to create meaningful concrete experiences for him or herself about the abstract concept covered in the video module.

Conclusion

Production of the video sessions and support materials was completed in time to offer the course to two distance sites during the Spring 1999 semester; approximately two years following the original RFP. In hindsight, the project required much more effort than was originally anticipated. However, the end product demonstrates that collaborative, multimedia curriculum development can be accomplished. A course such as "Culture and School Success" requires the combined talents of many individuals: From the original idea seed of the grant developers, to the content specialists, course design specialists, advisory board, producer and crew, artists, musicians, and of course all of the individuals who agreed to be interviewed and who opened up their schools and communities in support of this project. During the initial course offering, evaluation data for each session will be collected and used to make refinements in the course. A web site to support the course will be developed. The developers will also investigate possibilities for additional re-purposing of the course materials, including national distribution since the course is neither Utah nor tribal specific.

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TRANSITION

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HOW ARE STUDENTS WITH MILD INTELLECTUAL DISABILITIES INVOLVED IN PLANNING THEIR OWN TRANSITIONS?

(Abstract)

This exploratory, comparative, multiple-case study combined qualitative and quantitative data analysis to compare students', parents', and educators' perceptions of how secondary students and recent school leavers (ages 14-24), with mild intellectual disabilities, participated in their own Individual Transition/Education Planning (ITEP) process. Three components comprised the project, (1) focus groups, (2) individual interviews, and (3) review of ITEP documents.

Self-determination encompasses a person's right and ability to exercise control over her or his own destiny and involves both attitudes and capabilities that lead to individual goal setting and initiative to reach for those goals. Developing self-determination capabilities is a life long process that requires a great deal of understanding from parents and educators, so that they do not foster over-dependence.

Self-determination has been defined as "acting as the primary causal agent in one's life and making choices and decisions regarding one's quality of life free from undue external influence or interference" (Wehmeyer, 1992, 1996, p.22). "People with disabilities lack the opportunity to experience control and choice in their lives, and their lives would be more fulfilling and satisfying if this were not the case" (Wehmeyer, 1995, p. 38).

More than 300,000 known self-advocates are asserting that "self-determination is fundamental to being a person, even if it means different things to different people" (Michael Kennedy, 1996, p. 38).

The current educational emphasis on self-determination evolved from the principle of Normalization (Nirje, 1972), which represented a change in public awareness and thinking about people with disabilities and gave rise to the paradigm shift that led to the enactment of the Individuals with Disabilities Education Act of 1990 and its subsequent amendments of 1997, hereafter referred to as IDEA; the Americans with Disabilities Act of 1990, hereafter referred to as ADA, and Section 504 of the Rehabilitation Act, as amended in 1992 (Kiernan & Schalock, 1997).

In 1984, Madeline Will, then Assistant Secretary of Education in charge of the United States Office of Special Education and Rehabilitative Services (OSERS), made an urgent plea for improving outcomes for students with disabilities. Secondary special education was then focused on skill-based training for independence (Brolin, 1995). Students served in special education, vocational education, and work study programs were generally not achieving positive post school outcomes. Many were dropping out of school before graduation (Blackorby & Wagner, 1996).

It has been roughly ten years between the time that Madeline Will expressed those concerns and President Clinton's signing of the new Schools to Work Opportunities Act of 1994, a landmark bill prioritizing transition for every young person. During that decade, Andrew Halpern (1985) refocused transition concerns on the whole person by introducing his expanded model of transition, in which components other than employment were recognized. In the same decade, self-advocacy networks increased concern that civil rights of individuals with disabilities are being violated regarding equal treatment and access. Since the mid 1980s, the fields of education and human services have shifted away from labeling and placing groups of people in established programs, toward assessing the level of supports needed for individual persons to function as valued members of the community and away from providing sheltered work activities toward developing real jobs in integrated work settings.

Barriers affecting changes in the provision of service include traditional program-based funding streams and mechanisms, lack of professional and community awareness training, community attitudes, lack of accessibility and transportation, and exclusive treatment of individuals who are considered different (Abery & Stancliffe, 1996). For this reason, individualized, participatory planning requires considerable collaborative efforts. Students who have mild disabilities can participate in consensual decision-making and benefit from what West and Idol (1990) called, "mutual empowerment," afforded by functioning as a team member with parity (see also Gajar, Goodman, & McAfee, 1993).

The literature supports self-determination as a necessary educational outcome because it facilitates successful programming, develops life long strategies and skills, and assists in the prevention of depression (Fields, 1996). Schloss, Alper, & Jayne (1993) presented a model for enhancing individual choice. Several curricular and instructional programming guides have been developed over the past decade such as I-PLAN (Van Reusen & Bos, 1990) and Choice Maker (Martin & Marshall, 1995; see also Hoffman & Fields, 1995).

Enabling students to play a key role in their Individual Transition/Education Plan is important to their attaining optimal outcomes for a number of reasons. First, students who choose their own activities are more motivated to complete them (Van Reusen & Bos, 1994). Second, opportunities to express preferences lead to more openness or willingness to communicate between students and other stakeholders in the educational process, which in turn leads to more individualized educational outcomes (Martin & Marshall, 1995). Third, best practices in the field of transition focus on student participation in the planning process (Agran, 1997). If transition services are to prepare students with disabilities for adult living, then there is need to improve their participation in planning and decision-making in the process that determines their future circumstances (Martin, Marshall, & Maxson, 1993). IDEA requires that transition be characterized by a coordinated set of activities and services based on individual student's needs, taking into account the student's preferences and interests [IDEA, Section 602 (a)(19)]. The individual transition plan must, by regulation, include a statement of the student regarding their long term desires for adult outcomes (Pierangelo & Crane, 1997).

The literature also indicates that students and teachers agree that self-determination is a valuable educational outcome. Johnson, Sharpe, Sinclair, Hasazi, Furney, & Destefano (1997) studied the degree to which school districts were implementing the transition mandates. Briefly, what they found was that most teachers (82%) invite students to participate in their ITEP meetings, and that (89%) of participating teachers prepared students for participation in their planning by talking with them informally about their goals.

Wehmeyer & Schwarts (1998) studied transition goals and objectives of 136 students with intellectual and other types of developmental disabilities in one urban and one rural setting. They looked for goals, objectives, or described actions across all IDEA categories that could lead to outcomes in any of the component elements of self-determination established by The Arc of the United States (Wehmeyer, 1995). Out of 895 goals reviewed, only 32 were found to address self-determination component skills. Thirty goals addressed choice-making and two addressed decision-making. These findings suggest that students are not receiving individualized instruction in necessary skill clusters to enable them to become self-determining men and women (Wehmeyer & Schwartz, 1998). Wehmeyer (1995) concluded that professionals and community persons need to set expectations of people with developmental disabilities higher and perceive them to be contributing members of society worthy of respect and dignified treatment. That treatment includes providing appropriate instruction and opportunities to participate fully in their own life.

Methods

Setting

West Virginia is considered an impoverished, mountainous, rural state. It's school districts are county-wide. The three main urban centers are geophysically separated. The overall employment to population ratio is 50, the lowest in the nation, and over half of West Virginia's children live below the federal poverty line. One out of every 62 seventh through twelfth graders drops out of school. One fourth of all births are to mothers with less than a twelfth grade education. One out of every 10 babies are born to unwed, teenage parents. One out of every 270 children suffers from neglect or abuse (West Virginia Kids Count Data Book, 5th Edition, 1996). In 1990, the population ratio of Black to Caucasian individuals is 3.3%, and the ratio of Black individuals to total state population was approximately 3.4%. The 1990 reported percentage of Native American population for the whole state is approximately 1.4% (McGrath Libbey & Price Reinke, 1995-96).

Participants

The researcher used purposeful selection. Sixty individuals from five counties, two urban and three rural, across northern West Virginia participated in the study. Following is a profile of participants: 22 students (37%), 4 graduates (6%), 18 parents (30%), 14 educators (24%), 2 counselors (3%).

Design

Research Questions. Over-arching Questions were grouped as follows: A. What meaning is attached to the ITEP process? B. How are students participating in the ITEP process? C How do participants view self-determination?

Secondary Comparative Research Questions were grouped as follows: A. Are there thematic differences among cases in relation to the three areas of primary research focus? B. Does the data validate the anticipation expressed in the field that younger students should feel better supported (than graduates) by more highly developed transition systems? C) Are gender differences reported in the literature evident in these findings? D) Are there within case differences between perceptions of urban and rural participants?

Document Review Review Questions were grouped as follows: A) How do ITEP documents reviewed reflect what the participants are saying about the process? B) Do the ITEP documents reviewed address self-determination needs of individual students with mild intellectual disabilities by including goals, objectives, or actions designed to promote self-determination? C) Are the students' or recent graduates' interests and concerns reflected the ITEP documents? D) How well do the ITEP documents reflect the participation of the individual student in the planning process? E) Do the ITEP documents reviewed indicate any systemic issues or barriers to development of self-determination by students with mild intellectual disabilities?

Procedures

Data Collection. Individual interviews with 20 students and 4 graduates (ages 14 through 24) were conducted prior to initiating the focus groups so that information that may be heard in a group would not bias their responding during interviews. Next, The researcher moderated eight focus group sessions over a four month period in four counties, six in urban areas and two in rural areas, across the State of West Virginia. Interviews were audio-recorded and focus groups were video-recorded. ITEP document reviews provided an additional mode of gathering data about the perceptions of key stakeholders in the ITEP process.

Data Analyses. Interpretive and comparative methods were used to analyze emergent constructs, themes and relationship (Gall, Borg, & Gall, 1996). The following approaches to analysis were utilized: (1) Interpretive analysis resulted in an overall impressions of the data gained through reviewing tape recordings, reading summary notes of interview sessions, and reviewing documents; (2) Constant comparative analysis refers to the spiraling interplay of inductive and deductive processes used to build constructs and check data for fit. Forty-nine initial themes were identified within and among cases and coded through tagging, sorting, and merging procedures enhanced by the use of HyperQual2. These coded themes were then reorganized as sub-categories of the following five thematic areas: Awareness, Teaming, Planning Self-determination, and Emergent Needs and Concerns. All sub-categories were verified through member checking. Subcategorical themes were charted as to actual numbers of participants generating related data chunks, and percentages were obtained for each case perspective. A prediction profile was run in JMP version 3 to screen cases for effect size of certain sub-categories. (3) Case comparative analysis matrices revealed commonality and uniqueness across cases; (4) Cluster analysis explored the configurations of sub-category groups. (5) Case-oriented quantification allowed the researcher to explore relationships within thematic categories by applying the appropriate statistical operations (Ragin, 1995). Bivariate cross-tabulation with Chi Square analysis was used to visualize data and indicate where original context warranted further investigation. Cluster analysis indicated common features among cases. Multi-vocality within-case was verified in member-checking. Non-parametric correlations offered indication of case alignment and of relationships among sub-categorical themes. Analysis was on-going and additive (Miles and Huberman,1994).

Triangulation. Member-checking was used to determine within-case splits. Emergent data were then triangulated with information from 29 interviews 15 ITEP documents. Case-oriented quantification provided additional verification of emergent data.

Results

Overview of Findings

Awareness. Parents perceived students learn better by doing real things in real places (outside school). Graduates felt that working in the community is the best support for increasing student awareness. Students felt they know their own strengths and needs. Graduates confirmed educators' assertions that students hear both their strengths and their needs from educators. Students and educators are aligned on the importance of fitness and exercise. Students and educators (except in the most remote site) were aligned on the notion that there were a lot of job opportunities and things to do in their counties.

Teaming. Students generally felt supported by other members of their planning teams. Parents perceived that students felt supported by other planning team members, and that counselors help plan, however, they recognized that some teachers do not care about individual student plans. Students felt that collaboration among their educators is good. Students concur with parents that, generally, parents are the dominant decision-makers. Educators and students consider student input very important. Parents were split on this notion. Educators and students concur that they can make the process happen. Students and educators concur that students perceive their career planning to be very important. Educators responded above the mean on the notion that students are prepared informally for their roles in planning, and that getting the person in the right place with the right supports is the key to successful transition. Some educators and graduates concurred that there are great community supports and role models.

Planning. Educators, parents, and students perceive that there is not enough time for planning. Some students were looking beyond traditional entry level jobs, to further their education in business, art, or child care. Graduates talk with their parents about their futures, although this presents difficulties for some. Rural vocational educators felt that girls are more attentive to planning than boys. Note: This was not verified in member-checking.

Self-determination. Educators and parents responded above the mean on the notion of self-determination depending on awareness and functionality of students. However, educators interjected the notion that self-determination depends on individual and environmental factors. Parents and educators responded above the mean on community exposure being the key to self-determination, and that communication is more difficult for students with moderate intellectual disabilities. Educators felt that self-determination is not taught directly, but rather it is integrated into all classes. Counselors do not agree. Graduates all felt that students need assertiveness and communication skills. Students perceived that coordinated transition efforts increase their self-determination capabilities. Parents and educators verified that students felt they have some choice but are required to take block courses. All of the above information is consistent with hierarchical cluster means.

Triangulation

ITEP document review. All 15 ITEP documents reviewed had been signed by the student to whom the plan pertained. None maintained a space for recording specific student input. In three student's cases, no objectives were specifically written to take into consideration the students' expressed desires for the future. Transition planning sections of the documents in all counties were particularly brief attachments to the main planning document. Generally they named services to be provided and persons responsible to see that the services were carried out. All but three documents emphasized self-regulation and self-management skills, such as self-checks for grooming and appropriate dress, with some goals and fewer objectives for problem-solving. One third of the plans reviewed stated goals for self-advocacy but specified no objectives for developing advocacy and leadership skills, for goal setting and attainment, or for risk taking and safety.

Member-checking. Parents were split on the notion that coordinated transition efforts and students working in the community increase student awareness. Some parents believe that students do not know their own strengths and needs, such as the need to stay fit and healthy. Student responses were not split. Student responses were the most variable, however, their responses to member-checking were the most stable. An interesting split occurred between participating counselors and teachers. Educators and parents were split on the notion that students hear both strengths and needs from teachers and that self-determination is taught in all classes. Rural and urban educators do not agree that parents are the dominant decision-makers. Educators do not all agree that there are great community supports and role models. The high negative correlation between doing things in real places and job opportunities within-county is that, in reality, job opportunities are better in urban areas. Transportation is much more accessible in urban areas.

Discussion

Interpretation of Findings

Awareness of Self and Resources. Except in the most remote county involved in the study, students could identify agencies and resource available to help them develop their careers. This was not the situation for students that had to be bussed long distances and remain all day at school. Special educators in that district wrote grants so students could look up transition information on the Internet. It is well documented in the literature that students with disabilities hold the same values but lower expectations than do peers without disabilities (Fisher & Harnisch, 1992). Students in this remote county anticipate low paying careers. To illustrate, one male student from that remote county complained, "If I'm going to be a blue collar worker all my life, why do I need to know about classification of the animal and plant kingdoms?"

Urban educators recognized that parent expectations of their sons' and daughters' capabilities had to change, but in many cases, they don't hold out much hope for that to happen. Rural educators still struggle to involve parents in meaningful planning.

Informal Preparation of Students for Self-determining Roles. For the most part, students attend their planning meetings. For whatever reason, a few did not attend by parent choice. All participating educators reported that they encourage and prepare students to attend and speak up informally. This does not necessarily mean students were poorly prepared, but there was no evidence that any uniform or systematic training was taking place that would increase their ability to exercise choice, make planning decisions, or communicate with other team members about their plans. Educators' assertions that self-determination is integrated into all classes was not verified on member-checking. Younger students interviewed were describing more self-advocacy for needed accommodations.

Meaning of the ITEP Process. Parents and educators do not believe that students attach much meaning to the ITEP process until they are seniors. Students and graduates could tell you what would happen if you don't plan. "If you don't plan, you could make a big mistake and get blocked into the wrong courses."

Time and Support for the ITEP Process. Across all cases and counties it was reported that there was not adequate time or school-wide supports for planning. Educators reported having to do a lot of work at home, on the phone, or from their cars. Much of the burden of implementing and coordinating the mandates of IDEA and ADA fall on the special educators. Special educators reported spending a lot of time ensuring that collaboration with other team members occurred in order to get the job done. Both rural and urban educators receive a lot of empathy from parents who express concern that educators are overloaded. One rural mother said, "Teachers can be involved in a meeting, and when the bell rings, they have to jump up and run." "An urban father said, "Teachers are doing a great job at coordinating all they have to, but they need a lot of help."

Issues in Teaming and Communication. One graduate and several students indicated difficulty talking with their parents about future plans, and for some talking about planning in itself is difficult. Educators and parents agree that students with more involved disabilities have a harder time communicating. Sixty two percent of students interviewed indicated that team members listen to their worries and wishes about the future, but not all their teachers.

Collaboration among regular educators, special educators, and vocational educators was reported to be good by urban and rural special educators, students, and graduates, but not by vocational educators. They noted differences with special educator over how students should be accommodated for assignments and test-taking. They also noted the need for a county-wide transition coordinator. This finding was verified across cases and counties. One urban parent said, "Teachers don't have the training they need to implement inclusion, let alone the collaboration that it takes to implement and coordinate transition and self-determination."

Parents and educators are not communicating well about the behavioral and social emotional needs of the students. A rural mother who is otherwise very supportive of her daughter's transitions said, "They ought to go back to paddling students. They would get more out of these kids, and the students would listen to them."

Perceptions of Self-determination. All cases, educators more than parents, believe that coordinated transition efforts and working in the community are the best supports for the development of students' self-determination. Parents generally hold lower expectations of student outcomes than do educators. Conceptualization of the meaning of self-determination was different from case to case. Fifty four percent of students expressed need for help with goal-setting. One rural student said, "I have time, but it is hard to plan." Roughly 37.5% of students interviewed felt they needed help with math skills. Several students complained that they had no art experience in school. Parents seemed more in tune with self-determination component skills that were educators. They identified self-management, self-confidence, risk-taking, assertiveness, self-advocacy, and a willingness to try. Educators identified assertiveness, social skills, self-grooming, safety, and mobility skill areas.

Limitations

The major limitation affecting this study was the unbalanced participation of parents. Two fathers and one step-father from urban counties participated. Fifteen parent participants were mothers. The effect on the project of this absence of input from fathers was that the role of fathers in the ITEP process remains unclear and less well understood than the role of mothers.Rural parents were more difficult to recruit and engage than were urban parents. Only four rural parents participated, and these were all mothers. This phenomenon may be typical of parents who have sons and daughters with disabilities in West Virginia schools. Participation of graduates was also unbalanced. Only four urban graduates. The unbalanced participation of parents and graduates could have affected the project's ability to reach theoretical saturation (exhaustion of responses) for those affected cases. For this reason, the team worked very hard to maximize the participation of all interviewees and focus group members. Guidelines were followed to enhance and support their responding. In spite of these imbalances in participation, the research team thought that a good mix of parent perceptions was attained from the study because the overall array of parent participation was rich in family relationships, mothers, fathers, step father, grandmother, and two parents who also served as legal guardians. In addition, one urban family brought racial diversity to the study.

Implications

Implications For Research. In the Fall of 1996, this researcher wrote a modest proposal to OSERS requesting funding to take The Arc Self-determination Scale (Wehmeyer, 1995) into West Virginia public secondary schools and administer it to students with mild intellectual disabilities, age 18 through 21. Although that proposal was not funded, the idea of attaining self-report measures of students' self-determining behaviors is still viable. Implementing that research would also provide a vehicle for educators to assess student needs and starting points for systematic instruction in the components of self-determination. Ianacone & Kochhar (1996) made a concerted plea for deeper understandings and for striking a deeper dialogue related to how youth development should be fostered. A research question that emerged from the limitations of this study is, "What is the role of fathers in futures planning for students with mild intellectual disabilities?" It would be helpful to study family dynamics around the issues of transition and self-determination. Study along this avenue may shed light on why it appears so difficult to involve rural parents in the ITEP process.

Implications for Policy. West Virginia Department of Special Education needs to address the transition planning form at the state level and work its prototype into a usable format for Local Education

Agencies (LEAs) to enhance the planning roles of students and other team members. Closer monitoring of the implementation of IDEA, both at the national and the state levels could assist LEAs to properly implement the spirit and the mandates of IDEA. There are still situations in which parents opt not to allow students with mild intellectual disabilities to attend their ITEP meetings. A strand for educating preservice teachers in ways to promote self-determination for students with disabilities could be woven into the special education programs of University Department sof through committees on diversity.

Implications for Practice. Special educators need to communicate with parents and families to help them envision a career path for their sons and daughters, thereby raising the general expectations that their sons or daughters can, with their support, develop meaningful careers. Parents and educators need to communicate openly to identify problems and work out practical solutions prior to the ITEP meetings, so that during the meeting, the climate remains conducive to maximize the input of all team members. Because some families have communication difficulties due to social problems and poverty, educators need to find ways to reach them and make their participation in the process meaningful. Educators need coordinative assistance to implement inclusion, transition, and self-determination while simultaneously faced with school reforms. Students are asking for assistance in learning to set goals and work toward them. They deserve the full attention of their planning teams. Educator/mentors need adequate time and school-wide supports to implement the mandates of IDEA (inclusion and transition) and promote the development of self-determination by students with disabilities. The idea that self-determination capabilities are tied to functionality no longer holds. All students with intellectual disabilities need systematic instruction (Wehmeyer & Schwartz, 1998). Students with mild intellectual disabilities can have just as much difficulty communicating as students evaluated to be functioning within the moderate range. The next step in the development of self-determination is to further refine the definition of components of self-determining behaviors and to refine methods and materials to facilitate their formal instruction (Ruth Katz in personal communication, October, 1998).

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TEACHER EFFICACY AND RURAL COMMUNITY TRANSITION FOR ADOLESCENTS WITH DISABILITIES

In 1994, President Clinton signed the School-to-Work Opportunity Act to provide educational assistance for the development of marketable job skills to approximately 75% of those students who will not pursue the traditional college education after high school (Council for Exceptional Children, 1994). These students include high school dropouts and those with a high school diploma but no marketable job skills. According to Krieg, Brown, and Ballard (1995), in the current information age, marketable job skills include:

- acceptance of responsibility for the end product,
- ability to read, write, and use math to solve multistep problems,
- the application of multidisciplinary knowledge to problem solutions,
- ability to organize tasks,
- evaluate products from the consumer's perspective,
- flexibility to meet consumer demand,
- adaptation to changing needs in the workplace,
- interpersonal skills required of a team member,
- adaptation to diversity,
- a broad technical knowledge base and ability to apply it,
- creative problem-solving skills.

Concomitantly, the most critical goal within special education has and continues to be the provision of an education that supports independence and autonomy among children and youth with disabilities. This phase of a student's educational experience is commonly referred to as transition and is defined as ". . . a coordinated set of activities for a student, designed within an outcome-oriented process that promotes movement from school to postschool activities, including postsecondary education, vocational training, integrated employment, continuing and adult education, adult services, independent living, or community participation" (IDEA, 1997). Obviously, this goal implies the responsibility to assist youth with disabilities to make a transition from the school to the community and work environments. Unfortunately, data on students' transition indicates that school professionals need to strengthen the educational program and curriculum if students are to achieve successful transition outcomes.

In the past decade, numerous studies have reported disappointing outcomes or benchmarks regarding successful transition to the community. Haring, Lovett, and Smith (1990) reported significant underemployment and low wages for students with disabilities. Wagner (1993) indicated that 31% to 50% of individuals with learning disabilities respectively, either had been arrested once or were parents within five years of high school graduation. Fairweather and Shaver (1991) reported that only 17% of individuals with learning disabilities were enrolled in postsecondary education, and Malcolm, Polatajko and Simons (1990) found that approximately 56% of students with learning disabilities left school before graduation.

While the information provided above describes policy or statistical analysis on a national level, it is logical to assume that the aggregate data masks variation in transition policy or student outcomes on a regional, state and local level. It is also likely that the outcome measures used to determine transition success in rural areas *are more likely* to reveal more serious problems and potentially, a more dismal transition outlook for rural adolescents with disabilities. Rojewski (1990) reported that rural schools serve larger percentages of students with disabilities or who are at-risk of educational failure. Further, Helge (1992) cites geographic and distance barriers as a hindrance to any special education service delivery. She notes that the cost of service delivery in rural and remote schools sharply escalates due to higher transportation costs and longer time commitments for staff and students to cover distances related to service delivery. Carlson (1993) reports significant poverty in rural areas due to long-term economic decline and an exodus of jobs. These factors result in outdated and low quality programs, limited relevancy to local economic needs, and lack of authentic job experience (Rojewski, 1990).

Compounding these rural barriers are professional recruitment and retention issues faced by rural schools (Gold, Russell, and Williams, 1993). In general, administrators of rural schools report difficulty in recruiting and retaining licensed special education personnel and many of these individuals employed are unprepared to implement a transitional curriculum. Gold, Russell and Williams noted that school administrators reported the need to employ individuals with temporary teaching licenses whose training in special education was limited to nonexistent.

Even when rural schools are able to employ special educators who have completed appropriate courses of study, Collet-Klingenberg (1998) noted that many questions must be researched before the nature of effective transition programs is clearly understood. For example, questions such as what do the best transition practices look like, how shall transitional outcomes be measured, and what are effective transition curricula require attention. Logic further indicates that there is no single correct response to these questions. In fact, it is likely that any attempt to research such questions on a national level will fail since such research may not accommodate the unique characteristics of rural and remote regions of the country. Still another critical variable which must be explored and addressed if rural schools are to build successful transition programs is the professional efficacy required to implement transitional practices.

Personal efficacy as defined by Bandura (1997) is an individual belief in one's ability to perform behaviors required. Bandura has noted that the factors outlined in Figure One contribute to or hinder professional performance.

Figure 1
Factors Which Promote or Impede Professional Performance

Promotional Factors	**Related Impedimentary Factors**
• explicitly stated performance functions	• avoidance of use of professional capacity
• motivational effects of goals	• poorly directed effort
• inclusion of stakeholders in goalsetting	• low productivity and outcomes
• reciprocity	• failure to accept organizational goals and no personal obligation to meet those goals

Czubaj (1996) asserted that a strong sense of personal efficacy was a requisite for the application of professional competencies needed for goal attainment by teachers. She noted that teachers with a strong belief in personal skills associated with a competency were more likely to apply their knowledge while other competencies were ignored or used less frequently when teachers perceived themselves as unskilled relative to performance. Earlier, Starko and Schack (1989) concluded that the teacher's perception of personal efficacy impacted decisions to initiate activity, the amount of effort applied to the activity and continuance of the activity in the face of obstacles. Following is a summary of the skills required by special educators in the implementation of transition services as well as those skills need for rural special education service delivery.

According to the Council for Exceptional Children (1996), the generic skills required by special educators for the delivery of instructional content and practice which impact transition include the ability to:

- design, implement, and evaluate instructional programs that enhance the student's social participation in family, school, and community activities;
- teach students . . . in a variety of placement settings;
- structure the physical environment to provide optimal learning . . .
- utilize research-supported instructional strategies and practices, including the functional embedded skills approach, community-based instruction, task analysis, multisensory, and concrete/manipulative techniques;
- teach culturally responsive functional life skills relevant to independence in the community, personal living, and employment, including accessing public transportation, cooking, shopping, laundry, functional reading, and sexuality;
- assist students, with the support of parents and other professionals, in planning for transition to adulthood including employment and community and daily life, with maximum opportunities for full participation in the community and decision-making (pp. 48-50).

Similarly, the transition skills cited by Gold, Williams, Stowers, and Dutey (1996) for graduate level training programs designed for special educators serving rural schools include:

- development of vocational training sequences based on an analysis of rural community employment needs;
- application of behavioral analysis procedures to academic and vocational training sequences for students;
- application of appropriate consultation and communication principles with parents, peers and community members, including agencies;
- ability to select and adapt academic materials based on students age, interests, and training needs
- ability to draw from regular and special education curricula for individualized program planning;
- ability to provide appropriate social skill training to students with disabilities;
- selection of effective service delivery models for students with disabilities;
- awareness of alternate resources to provide services to rural students with disabilities.

In rural schools, it is often the case that rural special educators *are the transition program* for students. Since personal efficacy is essential to the development of effective transition practices for rural student with disabilities, it is shortsighted to consider only those factors impacting students. It is also important to consider the professional development needs of special educators serving those students. The first step in the development of a rural transition program is the development of goals and related benchmarks for their achievement. This step is critical since stakeholders should not be overlooked. As Enderlin-Lampe (1997) noted, educational professionals must function as a team to "develop group capacity and ability" in the delivery of educational services. According to Coombe (1993) the stakeholders include students, teachers (vocational, special, and regular), administrators, parents, potential employers, and agency personnel. The benchmarks lead to data collection related to the goal in question. In other words, the establishment of a goal is insufficient with regard to personal efficacy; rather, productivity measures related to the goal lead to concrete knowledge of performance expectations and the application of professional capacity.

The literature also suggests that goals which are approached in a reciprocal fashion are more frequently achieved. As Bandura (1997) noted, forced consensus is misleading and may mask power plays and pressure to conform. West, Idol and Cannon (1989) define reciprocity as "...allowing all parties to have equal access to information and opportunity to participate in problem identification, discussion, decision-making, and all final outcomes" (p.4). Further, these authors note that reciprocity is achieved when team members engage in job and information sharing, group consensus, complementary efforts and supportive decision-making. Further, Saavedra, Earley, and Van Dyne (1993) state that activities requiring coordination, communication and cooperation between team members impact group efficacy. Similarly, Bandura stated that a "weak link in an activity that has to be performed interdependently can spell group failure even though the remaining members are highly efficacious" (p. 480). Simply put, everyone involved has to be on the same page at the same time.

When setting programmatic goals for the development of transition services, Coombe (1993) urges that stakeholders be provided with detailed information about the service region, the professional staff, the students and local resources. He suggests that those coordinating the work of the group provide the following data:

- *The Region;*--regional population including population of working age, total population working, nature of employment and future trends;
- *The Professional Staff*--professional training and both school and nonstop employment history;
- *The Students*--student paid and unpaid employment history, how employment was secured, the nature of the job, salary, employment length and reasons for leaving, the nature of support systems available, vocational and educational assessment results;
- *The Local Resources*--Vocational Rehabilitation Office, the Private Industry Council, area employment offices, representatives from state colleges and universities, and representatives from the business community.

Using the information provided above, many rural school transition teams begin to design not one but multiple transition options to meet the array of needs exhibited by students with mild to severe disabilities. Coollet-Klingenberg (1998) suggests that rural schools with successful transition outcomes provide a wide range of transition experiences for high school students. Benz, Yovanoff and Doren (1997) have found that school-to-work programs are one of the positive predictors for successful school transition. These authors suggest that the following work experiences are statistically relevant to successful transition outcomes; community service, job shadowing, school-based enterprise, youth apprenticeships and paid work experience.

In addition to successful transition outcomes, efficacy is another important reason to plan for a variety of work-school based learning activities. Since there are varying degrees of knowledge and experience among the stakeholders involved in providing transition services, building individual and group efficacy must include a match between each stakeholder's ability, knowledge and experience and their role in the delivery of a transition curriculum. Figure Two illustrates the potential match and mismatch between a professional involved in service provision and the knowledge and experience required for implementation.

Figure 2
The Match and Mismatch Between Transition Professionals and Transition Services

Professional	**Transition Activity**	**Knowledge Required**	**Skills Required**	**Efficacy low to high**
special educator	instruction in basic skills for employment	• material selection • instructional planning • task analysis • instruction	• determining readability • previewing materials • modifying materials • prompting, guided practice, evaluation, data collection, record keeping	• high • high • moderate • high
special educator	place student in paid work environment	• understanding vocational assessment results • communicate with student, parent, staff, employer • job analysis • job training • evaluation	• interpret vocational assessment results • collaborative and assertive communication; written communication skill • social analysis, environmental analysis, academic analysis • task analysis, prompting, error correction, feedback, reinforcement • data collection-qualitative and quantitative	• moderate • low • low • high • moderate

To improve efficacy among professionals involved in delivering a variety of transition services, it may be necessary to supplement each individual's training and experience. For example, if one skill or competency in the set required for provision of a transition service is ranked by the individual responsible as "moderate," it is possible to target that skill for professional development. Similarly, if most of the skills required for service delivery are perceived as low relative to personal efficacy, the best decision may be to identify another member of the professional team to deliver that particular service. In short, to improve the quality and breadth of transition services, professionals involved in delivery should have an opportunity to communicate their perceptions of the extent to which each is prepared to meet transitional goals. *The match between the professionals perceived ability to execute skills required for the specified transition service is key to overall program success.*

When all stakeholders involved have an opportunity to engage in the following tasks in the establishment of transition programs, reciprocity is achieved and both individual and group efficacy increase.

- examination of student, community and professional data
- participation in goal setting
- recommendations regarding staffing patterns and organizational expectations
- examination of outcome data
- evaluation of program effectiveness

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TOTAL IMPACT: TRANSITIONING FROM SCHOOL INTO THE WORKFORCE FOR STUDENTS WITH DISABILITIES

A critical issue facing all high school students, and especially those who exhibit special needs is making the transition from school into the work community. In 1983 the federal government tapped transition as a national priority and required schools to develop plans that provided for comprehensive transition services for special needs students (Rusch and Phelps 1987). Research shows that despite this effort many students with disabilities remain unemployed (Sitlington, Frank, and Carson 1992).

The movement toward transition has strongly emerged as a focus point for educators with the reauthorization of the Individuals With Disabilities Act on June 4, 1997. The focus has now shifted towards innovative practices in such areas as career education, functional academic curriculum, community-based instruction, work experience and on-the job training for students with special needs.

In Title 34 Code of the Federal Regulations (CFR) 300.27, "Transition Services" means a coordinated set of activities for a student with a disability that is designed within an out-come-oriented process, which promotes movement from school to post-school activities, including:

- Post-secondary education
- Vocation training
- Integrated employment (included supported employment)
- Continuing and adult education
- Adult services
- Independent living
- Community participation

The coordinated set of activities is based upon the individual student's needs, taking into account the student's preferences and interests, and includes:

- Instruction
- Related services
- Community experiences
- Development of employment and other post-school adult living objectives, and when appropriate, acquisition of daily living skills and functional vocational evaluation

Educators who work in rural communities are acutely aware that there are characteristics that could be classified as barrier-loaded when providing appropriate services to special students such as transportation, geography, an increasing unique student population, personnel turnover and resources that are appropriate and accessible. Researchers identify problems to be overcome as resource scarcity, long distances, inadequate transportation, a limited economic base and low population density (Elrod, Cahalane & Combe 1997). On the support-loaded side there are characteristics of rural communities that accommodate work with special populations such as strong parent involvement, community partnerships and positive peer support.

According to an article in *Teaching Exceptional Children* (Jan/Feb 1998), the results of a study done in 1992 yielded the information that students with disabilities and their parents have ordinary expectations that other students and parents have, but to make this happen, it will take extraordinary collaborative efforts on the part of team members (Malian & Love). Although the reauthorized IDEA of 1997 serves as an impetus for special education services in this country and is supported by Section 504 Rehabilitation Act of 1973 and the American with Disabilities Act of 1990, it appears that public schools will always be responsible for providing programming that accommodates students with special needs as schools fall under the public entity domain.

School systems must then collaboratively expand their educational curricula to include the community. Programs must have a functional focus that is individualized to meet the needs of each student with a disability. Independent living skills, interpersonal skills, career directed instruction with vocational interests as needed, mentoring and the opportunity to practice learned skills prior to entry into the job training sites or employment, are all necessary components for an effective transition program. The final efficacy of special education programs will be judged by the quality of life that students with disabilities achieve after they leave the hallowed school halls.

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PERCEIVED ROLES AND COMPETENCIES INVOLVED IN THE TRANSITION PLANNING PROCESS - A COMPARISON OF RURAL AND NON-RURAL AREAS

The coordination of school based transition services for students in special education requires the participation of a diverse group of people in order to bring about a successful post-school adjustment for the student. Inadequate planning and follow-up training can have a drastic impact on the individual. Coelho (1998) reported that only 26% of working age people with severe disabilities are employed. This contrasts with the overall 82% employment rate for the general population.

Statement of Problem

While mandates may outline the services that must be provided in the transition process, they do not define how the services should be provided and who should provide them. This results in many different interpretations and confusion in assignment of tasks to responsible parties. Therefore the major problem lies in a duplication of tasks by some members of the transition planning team, or in many cases, a tendency for some tasks to "fall through the cracks", thus resulting in an incomplete planning and training process for the transitioning student.

Barriers to Successful Transition:

Gallivan-Fenlon (1994) reported major traits that inhibit successful transition from school to adult life. Among them were differing future expectations for young adults with disabilities; a lack of transition related knowledge; hastily and poorly coordinated transition planning; and low levels of family participation. There are several reasons for poor transition planning. First, many of the responsible parties (parents, school personnel, outside agencies, and students) are not sure of their role in transition planning. Secondly, they are unaware of what information to provide (or be provided) Finally, once the plan is written, few guidelines exist for implementation and follow-up.

METHOD

The purpose of this study was to examine the differences in perceptions of the roles and levels of competency of the parties concerned in the transition process, and to compare those perceptions between rural and non-rural communities. This investigation was conducted in two parts. First, a field study was conducted to validate the questions contained in the survey instrument. Second, the survey instrument was administered to a selective sample of participants.

Instrumentation

The original survey instrument was developed by Baer, Simmons, Flexer and Izzo (1993), in Ohio. The original survey instrument was modified to correspond to Texas roles and responsibilities. A model developed by Roessler (1996), came closest to achieving that requirement. The position titles were then slightly modified to encompass both rural and non-rural school districts in Texas and to facilitate ease of classification. The instrument was then converted to double Likert format by adding the question pertaining to perceived competence. Open-ended questions were added to provide additional information on the relationship between the parties' global perceptions of their responsibilities and competencies and perceptions concerning those responsibilities and competencies when faced with specific tasks. The final instrument consisted of 40 questions. A double Likert format was designed to elicit responses for each item. The first Likert scale measured, the participant's perceived measure of responsibility, e.g., "I am primarily responsible for" (1 = Strongly Disagree, 2 = Disagree, 3 = No opinion or not sure, 4 = Agree, 5 = Strongly Agree). The second scale measured, the participant's perceived level of competency, as reflected by training, e.g., "I am adequately trained for" (1 = Strongly Disagree, 2 = disagree, 3 = No opinion or not sure, 4 = Agree, 5 = Strongly Agree).

Design and Analysis

The study was cross-sectional survey research (Fraenkel & Wallen, 1993) using a mixed design based on a general linear model. The independent variables were positions (parents, teachers, vocational personnel, administrators, and other); and districts (rural and non-rural school districts), the dependent variables were the perceptions of responsibility and perceptions of competence. Within and between groups scores were used to test Hypotheses 1, 2, and 3 by conducting two 4x2 ANOVAS. The first ANOVA analyzed the difference between rural and non-rural school districts when compared with the perceived responsibilities of the subjects (Hypothesis 1), and for comparing roles/responsibilities with the role/responsibility perceptions (Hypothesis 3). Hypothesis 2 was tested by ANOVA by analyzing the difference between rural and non-rural districts when compared with the perceived competence of the subjects. Hypothesis 4 was tested by conducting a bivariate correlation which compared grouping of subjective question responses with the associated dependent variables.

RESULTS

Sample profile

A total of 112 subjects participated in this study. The perceptions of the parents and education professionals were measured on an instrument designed to assess roles and competencies as reflected by training. The 112 participants completed a survey describing their demographic characteristics, perceptions of their responsibilities, and perceptions of their competence for those responsibilities. In order to determine common interactions between select variables and characteristics, the data were crosstabulated in a series of two-way tables. The data revealed several observations of interest.

Observations were made regarding the age of the participants by position. The results indicated that approximately 14.6% of the professionals were under the age of 30. If one were to make the assumption that these professionals graduated at an average age of 22, then only 14.6% were in a preservice program after the passage of the Individuals with Disabilities Education Act (IDEA, 1990). This could be a possible insight as to why so few professionals report having received transition training (Spruill & Cohen, 1991).

Observations regarding the gender and ethnicity of the professionals were also of interest. According to the demographic reports, the professionals were 73% female and 65% were of Anglo-American ethnicity. The majority of special education students are male. The Region 2 area is predominately Hispanic. These figures raise questions for possible future study as to the compatibility of transition training in cross cultural situations.

Multivariate and bivariate analyses were then used to address the following hypotheses:

Hypothesis 1

Hypothesis 1 stated that there will be no significant difference between the mean scores indicating perceived responsibilities of parties involved in transition planning between rural and non-rural districts. Analysis of variance was conducted to test the hypothesis of perceived roles between rural and non-rural participants.The results were not significant at ($p > .05$). Based on the insignificant results from the Analysis of Variance on Hypothesis 1, the null hypothesis was accepted.

Hypothesis 2

Hypothesis 2 stated that there will be no significant difference in the mean scores indicating perceived competence, as reflected by training, of parties involved in transition planning between rural and non-rural school districts. Analysis of variance was used to test the hypothesis of perceived competence between rural and non-rural school districts.The results were not significant (p >.05). Based on the nonsignificant results from the Analysis of Variance on Hypothesis 2, the null hypothesis was accepted.

Hypothesis 3

Hypothesis 3 stated there will be no significant difference between parties' mean scores of perceived responsibilities between positions. Analysis of variance was used to test the hypothesis of perceived responsibilities among positions.The results were significant, F (4,108) = 11.676, p = .01, a Tukey Post Hoc analysis was conducted to confirm the significance at Parent Responsibility Index and between the Parent position and the remaining positions (Teacher, Vocational, Administrator). The remaining variables were nonsignificant in the post hoc analysis at (p >.05). Based on the significant results from the Analysis of Variance on Hypothesis 3 , the null hypothesis was rejected.

Hypothesis 4

Hypothesis 4 stated that will be no significant relationship between the parties' overall perceptions and their perceptions when faced with specific tasks. Pearson R Bivariate Correlation analysis was conducted to test the hypothesis for a relationship between overall perceptions and the perceptions indicated on specific tasks. The results were significant, -.608, .016, P< .05. The significance was found at Administrator SPOC and Administrator Competence. Based upon the significant results from one test of hypothesis 4, the null hypothesis was rejected.

DISCUSSION

Perception of Responsibilities as reported by Parents and Professionals in Rural and Non-Rural Districts.

The first research question (Hypothesis 1) was to determine if there was a difference between the perceptions of the parents and professionals in rural and non-rural school districts as to their responsibilities under the transition process. Researchers have reported great variation at the local level related to the duties and perceptions that encompass the transition process (West, Taymans, Corbey & Dodge, 1994). Further, researchers have observed that smaller Local Education Agencies (LEAs) were less likely to provide vocational education and that most comprehensive programs were less likely to be in a rural setting (Fairweather, 1989). Therefore, this study attempted to use perceived responsibilities of various parties involved in the transition process and compare rural and non-rural settings. The use of the same instrument for both rural and non-rural participants was intended to confirm or rebut the prior research results. The investigation and analysis of Research Question 1 revealed that role confusion existed, thus hindering effective transition planning and training. However, there were no significant differences to indicate that perceptions of transition responsibilities differed between rural and non-rural districts.

Perceptions of Competency reflected by training as reported by Parents and Professionals.

The second research question (Hypothesis 2) attempted to determine if there was a difference between the perceptions of the parents and professionals in rural and non-rural school districts as to their competencies as reflected by training under the transition process. Researchers have observed transition training to be lacking in many cases for both parents and professionals (Spruill & Cohen, 1991; Gallivan & Fenlon, 1991; Bull, Montgomery & Beard, 1994; Schriner, Bellini & Williams, 1995). This became evident in the acceptance of null Hypothesis 2.While these observations were confirmed, the problem of inadequate training appears to be a universal one.

Perceived Responsibilities of Parents and Professionals

The third research question (Hypothesis 3) was to determine if there was a significant difference between parties' perceived responsibilities among positions. The research literature indicated differing opinions among transition team members as to their specific responsibilities (Campbell & Essex, 1994; Roessler,1996) indicated role determination as one of the primary barriers facing teams. Baer, Simmons , Flexer and Izzo (1993) delineated the responsibilities attributable to each party in the transition process. It was this model that became the basis for the survey used in this study. The examination of these roles indicated a significant difference existed among the parties as to their perceptions of the parents' responsibility in the transition process. This difference suggested that parents were highly aware of their responsibilities, however the education professionals had a different viewpoint of what those parents' responsibilities were.

Relationship of Global Perceptions with Perceptions when Faced with Specific Tasks.

The fourth research question (Hypothesis 4) examined the relationship between answers to subjective questions pertaining to parties' responsibilities and competencies and the responses given to the survey tasks. The instrument included two subjective questions which queried the respondents on their responsibilities in the transition planning process and their opinion as to whether they felt adequately trained to fulfill those responsibilities. The first test entered the SPOR scores with the criterion variables of the Responsibility Index. The analysis revealed no significant relationship. The second analysis which compared the SPOC scores with the criterion variables of the competency index, resulted in a significant difference. This significance was found between Administrator SPOC and Administrator Competence. While a relationship was established, further analysis was required to determine the value of such a relationship. The individual responses comparing the Subjective and Task referenced sections of the instrument by position. The relationship for the administrator is an inverse one, that is, there was disagreement between the subjective responses and the grand means of the competency index. This disagreement indicated that only 60% felt they were competent subjectively while 82% responded high average to high range on the competency index. Thus, most administrators indicated they were competent when answering the subjective question while the competency index indicated they were more highly qualified than their original perception. Finally, it should be noted that even though there was no significant difference between rural and non-rural in perceived competencies as reflected by training. The perceived shortcomings become apparent when analyzing responses.

CONCLUSIONS

This study attained three specific goals. First, it broadened the research base of special education as associated with perceptions of parents and professionals in the transition process. Second, it compared those perceptions between rural and non-rural communities. Third, it provided an awareness for both parents and professionals of the tasks inherent in the transition process, thus fostering dialogue to enhance collaborative efforts in planning, training, and implementation.

The first research question (Hypothesis 1) stated that there was no significant difference in the mean scores indicating perceived responsibilities of parties involved in transition planning between rural and non-rural school districts. The acceptance of Hypothesis 1 indicated that while different personnel may be performing different tasks in rural and non-rural school districts, the structure of transition planning and training is basically the same.

The second research question (Hypothesis 2) stated there would be no significant difference in the mean scores indicating perceived competence, as reflected by training, of parties involved in transition planning between rural and non-rural school districts. The acceptance of Hypothesis 2 indicated that rural and non-rural personnel were provided approximately the same levels of training. This is surprising, since the literature portrays non-rural districts as providing more training in transition related issues than rural districts.

The third research question (Hypothesis 3) stated there was no significant difference between parties' mean score of perceived responsibilities between positions. The acceptance of Hypothesis 3 suggested that professionals had differing opinions of parents' responsibilities than parents.

The fourth research question (Hypothesis 4) stated there would be no relationship between the parties' overall perceptions and their perceptions when faced with specific tasks. The significance was found at Administrator SPOC and Administrator Competence. These results indicated that the administrators, when faced with specific tasks on the instrument, were found to be more competent than they opined on the general question.Multivariate analysis revealed a significant difference among the various parties as to the perceived responsibility of the parent in transition planning and training. These results indicated the parents were most aware of their responsibilities in the transition process, but the other parties were unsure as to the extent of the parent's responsibilities. Bivariate analysis revealed a relationship between the administrator's perceived competence in the transition process overall and their perceptions of competence as portrayed by the tasks in the instrument. Finally, the results indicated that only administrators report that they are adequately trained to fulfill their role in the transition process. The other parties feel that increased training is necessary before they will reach a level where they are comfortable with the ability to fulfill their responsibilities to the secondary student in need of the services provided through the transition process.

Implications for Practice

Based on the findings of significant differences between parties' perceptions of responsibility and significant relationships surrounding perceived competence as reflected by training, the following implications are relevant:

This study confirmed there is variation in transition services delivered at the local level as reported by West, Taymans, Corbey and Dodge, 1994. Anderson and Asselin, (1996) reported that only 61% of transition teams used predetermined procedures. This research suggests professionals are often doing more or less than what they are responsible for, thus diminishing the quality of the work. Therefore, publication of a transition guide, based on this and other similar studies, outlining the responsibilities of each member of the transition planning team would have a great impact on the effectiveness of the process and the individuals it serves.

A greater awareness on the part of professionals and legislators of the transition process would greatly enhance the process at the local level. One way to increase that awareness would be for the state education agency to apply for a State Improvement Grant from the U.S. Department of Education, Office of Special Education and Rehabilitative Services (OSERS) to provide incentives for school districts to develop innovative transition program. For example, the Oklahoma GAINS project could serve as a model and use data from this study and others to support the application.

The results of this study and others (Alper, 1990; Reiter & Palnizky, 1996; Grigal, Test, Beattie & Wood, 1997) indicate that parent support is high and that the parent is the most consistent member of the transition planning team. Unfortunately, there are many students, whose parents do not get involved in their children's transition planning for a multitude of reasons. McNair & Rusch (1991), called for increased parent training as method of enhancing the transition experience for students. While this makes sense, one problem which remains is that we have to motivate the seemingly uninterested parent to participate in the training. This effort could be aided by an outreach program similar to "Child-Find". This "Parent-find" program would provide everything needed to bring the parent to transition training by using the more involved parents as mentors and teachers. This effort could also be supported by OSERS Parent

Outreach grant. This grant could offer stipends to mentors and to parents who would complete the training in addition to defraying costs of transportation, child-care, and training materials.

There is a great need for increased training of professionals through pre-service transition courses at the undergraduate and graduate levels and a need for increased in-service training. This is especially true for those in the vocational fields who may not have received pre-service special education training. This recommendation was indicated by the results of this study and supported in the literature (Alper, 1990; Spruill & Cohen, 1991; Schriner, Bellini, & Williams, 1995; Lehman & Roberto, 1996).

Recommendations for Future Research

The value of any research project lies in its ability to be replicated. There is a need for future studies examining the relationships described in this study. One method of widening the scope and to increase participation would be to compartmentalize the study according to the involved parties and design designated "role-unique" surveys so that participants are only answering questions which would pertain to them, thus making the survey shorter and less cumbersome to complete. This would result in greater participants and decrease the possibility of Type I error.

Additional studies including roles not covered by the Baer model (1993) are encouraged. It would be particularly noteworthy to include students, social service professionals, related service providers and paraprofessionals to examine their perceptions as to their responsibilities and competencies in the transition planning process. Finally, future studies on the prevalence of pre-service and in-service training to vocational personnel would be greatly enhanced if they include a transition component.

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TRIALS AND TRIBULATIONS OF EMPLOYMENT TRENDS FOR STUDENTS WITH LEARNING DISABILITIES

Abstract

The plight of students with disabilities has been in the spotlight for several years now. Recent legislation has made vocational training including students with disabilities a mainstay in most secondary schools. While there are studies that prove that training in a vocational setting does have a positive influence on students with learning disabilities, there are still ways in which the results are less impressive. With the increased number of students with learning disabilities not being able to maintain adequate time on the job, concerned parents and educators seek answers to unending questions. Some questions that come to the minds of many are such as a) when a student with a learning disability cannot find a job or keep a job, what does he/she do with their time and b) how does this affect their life (i.e. physically or mentally)? In as much as the effort to overcome disability is actively sought for by many, the effects of learning disabilities on young peoples' lives are unlikely to be eliminated entirely. Whereas disability implies a reduction in function that may influence the outcomes of people for a lifetime, this paper reveals interviews from three students who have discussed their own problems with unemployment or underemployment, their dreams of success, and their worries about the future. The conclusion examines implications for teacher education and special education in general.

Educators from various levels in the field are increasingly concerned with the problems and anxieties of the young men and women who occupy the seats in many junior high special education classrooms. These students often seem to be experiencing anxieties, but none that can be considered any different from any other teen aged youth. The boys will talk about girls and why they cannot get dates. The girls capture each other's attention by mentioning a boy's name that they all think they love madly. Nothing out of the ordinary, or so it seems at the time.

Outcomes for Students with Learning Disabilities

Current literature confirms that most young Americans with disabilities do not spend four years in college. Few students with LD (learning disability) go on to post-secondary training. In a national survey conducted by the American Council on Education, students with LD accounted for only 1.1% of all full-time, first-time entering college freshmen (Hippolitus, 1987). Wagner (1989) and her colleagues followed approximately 8,000 youths ages 13-23 with disabilities and reported that approximately 16% of students with LD entered post-secondary programmes. Of these, 1.6% enrolled in 4-year colleges and universities, 4.9% in 2-year colleges, and 11.1% in vocational schools.

Individuals with learning disabilities have encountered many challenges in seeking employment following exit from high school. For students whose plans have not included college, making a successful adjustment from high school to post-high school situations has been a dilemma. Jobless individuals with learning disabilities have often lived within the extremes of poverty and dependence. Often however, the students are unaware of the problems and tribulations that are ahead.

For some junior high school age students, graduating from high school means entering a vocational school or trade school to "learn a trade". Many towns now have local community colleges that offer vocational courses such as electrical technology, engineering and graphics design, industrial trades programmes, and nursing. Along the same path, there are several hair design/cosmetology colleges in the nearby area where usually the females enrolls to become hair stylists, manicurists, pedicurists, or a combination thereof.

Yet, for the majority of youths, who are in special education classes, a high school education will be the final opportunity for them to learn the skills critical to success in the world of work. Leaving high school means finding a job as soon as possible. Many of the youths want to be "out on their own". According to Halpern (1994), students at this age have a distinct manner about them by which they think they know everything there is to know and are defiant about authority.

Methodology

Semi-structured interviews were used in this investigation and common themes are illustrated by three students versions of how their lives have been effected by the lack of vocational training and/or the ability to maintain adequate employment. When possible, a personal interview was conducted. The researcher attempted to stay consistent with guidelines for the qualitative research pre-fieldwork which Stainback and Stainback (1988) refers to as the exploration of research sites. While pre-conceptions can interfere with the research, this study interviewed participants in domains not familiar to the researchers' repertoire. The interview consisted of open-ended questions, which were recorded, and later transcribed into a written format.

Through interviews of three students, themes are revealed within their stories that are common throughout the interviews of all students. Three students are mentioned to tell their stories through a period of 8 years. From 1990 when they were in the comfort and security of a junior high resource room to 1998, where the researcher has tracked their progression through the world of work, education and life. Here you encounter the stories from Jerry, Christy, and Jesse and how they are doing five to eight years after graduating from high school.

Interviews

Jerry

Jerry and his parents are long-time residents of a small town south of Houston Texas. He was diagnosed as learning disabled when he was in sixth grade. He made passing grades in high school and had hopes of being a forest ranger. As Jerry tells his interview, he speaks with a smile yet his head is down. His voice is low yet has glimmers of hope within. I have asked Jerry how he makes a living for himself:

> I draw an unemployment check when I'm not working construction. I took metal shop in high school and I went to the community college for a couple of semesters. I learned about mill-right work. But sometimes the jobs don't last long and so I go back and apply for unemployment. I usually get some help from Salvation Army or the government cheese or butter. I go to thrift stores to buy jeans and winter apparel.

While Jerry collects unemployment insurance, he supplements his checks with a favorite hobby of hunting and trapping and selling some of his captures to local fur buyers. The total earnings from these exchanges usually do not amount to much more than what was spent to kill the animals. Jerry never has any extra spending money; probably because he works for minimum wage only, which affords little of the known luxuries in life.

Other research reveals that despite wage advances, the median hourly wage for adolescents with learning disabilities still was just at $5.72 in 1990, representing an annual income of less than $12,000 for youths with disabilities who were employed full-time and year round. For individuals employed part time, which is most often the case, this figure is even lower. Moreover, about 60% of working youths received medical insurance benefits or paid vacation. These benefits were much more common among those who worked full-time or worked for higher wages. With such staggering figures, employers and educators concerned with the vocational aspects of these youths seek ways to improve the chances of these individuals getting better jobs (Wagner, Blackorby, Hebbeler, & Newman, 1993).

Jerry's work pattern is to work long enough at a construction job to qualify for unemployment insurance and then quit or take voluntary redundancy staff cut backs. This entitles him to receive unemployment compensation for a period of time. When the unemployment money has expired or has been depleted, he goes back to work in which after an unknown period of time, usually brief, he is laid off again and he is back at the unemployment office, filing for unemployment insurance. Research suggests that early employment experiences can be influential in the success that youth with disabilities ultimately achieve in the labor market. Further, early work experiences can also influence work-related behaviors that may stay with people throughout their working lives (Blackorby & Wagner, 1996). Jerry is in his middle twenties, unmarried and has no real future plans in sight.

> "I had a nice girlfriend for three years but she recently decided to not be involved with me. She said I had no future and was always broke."

The cycle of temporary work, collect unemployment, and receive government aid is one all too often familiar to post-secondary high school students with learning disabilities. Approximately eight out of every ten able-bodied working age Americans have a job, but only one out of every ten Americans with a learning disability is considered a full-time employee (Woodard, 1993). With such disproportionate ratios, it is probably correct to contend that citizens with LD comprise a large part of the unemployed in the country. Whether or not this is a life-style of choice is not the issue here, but rather if students such as the one in the scenario above would have a better quality of life, as described by some researchers (e.g. Esgrow, 1978; Halpern, 1992; Okolo & Sitlington, 1988) if better transition services in high school were provided to students with learning disabilities. The findings of the current interview are similar to those expressed in a recent report entitled, "National Longitudinal Transition Study", generated by Blackorby et.al (1996) discussing the findings relevant to the world of work and how students with disabilities fuse into the real world after leaving high school. Given that the early years after high school have been described as a floundering period for many youth (Halpern, 1992), a view past the first few post-school years is essential to have an accurate picture of youth accomplishments. Although success in employment does not necessarily correlate with success in other facets of life (Halpern, 1985), it clearly is a major factor of youths' chances to achieve economic and residential independence.

Christy:

Christy is a young woman in the eighth grade in 1993. She was labeled as learning disabled and somewhat withdrawn. In addition to cognitive delays, Christy also suffered from several physical maladies which seemed to create some minor disturbances in the learning and social process. She, since birth, had become constantly burdened with a moderately severe skin disease, which caused her skin to be chronically irritated and scaly. As a result, throughout the class period, Christy would scratch and claw at her arms or legs. She had female problems by which at the age of 18 she received a hysterectomy because the doctor had warned her that, because of her illness childbirth could be fatal. Even though Christy had a loving and caring mother, she did not have the educational background to continue to post secondary education. Christy expressed satisfaction with some aspects of her job, yet disappointment too:

> Since high school, I have worked in several service jobs. I was in a few vocational classes in high school and really learned a lot from them. I especially enjoyed the health care profession where I worked as nurses' aide in a home for elderly people and also for old people

> with crippling diseases. The pay was not enough for me to move out on my own. I lived with a girlfriend for awhile but I didn't want that either. Then I moved in with my boyfriend for a couple of months but decided that I didn't love him, so I moved out. Right now, (pause), I'm back at home with my parents. I get depressed a lot. Sometimes when I get down I get in my car and drive. I just drive to wherever until whenever. It may be 3:00 am when I finally go home. I want to do something with my life but I don't know what. One day I would like to be a teacher. I'm good with kids and I could teach them a lot.

Christy's story substantiates research that elaborates on the effects of unemployment and/or underemployment on an individual's mental and physical health. A large number of studies have shown that the unemployed or underemployed are less healthy, both physically and psychologically, than the employed (e.g.; Kessler, House, & Turner, 1985; Mastekaasa, 1996; Price, B., 1995; Warr, Jackson & Banks,1988). This interview also reveals Christy's desires as a young woman who wants to have a success story rather than to continue the stream of failures she has already encountered in her youthful life.

Jesse:

Jesse graduated in 1992 from a high school in a rural southern Texas town. He had been in special education resource classes from grades 8 through 12. His mother, being a special education teacher in a nearby district, was distraught and afraid that Jesse couldn't do the work in a regular class. He was failing several core subjects and began missing school frequently. Upon testing, Jesse was found to have a learning disability in written and oral expression. It was upon the parent's request that Jesse be placed in special education classes. Since graduation, Jesse has spent the last 6 years being unemployed or under-employed.

> Well, what can I say? I'm 25 years old and I'm bored to death with life.
>
> I get up every morning and feed my dogs. Then I go check my hog traps and trot lines that I've got set out on the river. I've been selling fish and wild game meat to restaurants and buyers who purchase the meat for resale to businesses around the area. I have tried to work at different jobs. Once I had a job loading hay and baling hay. But that is seasonal and not very steady. I tried to get on as a truck driver for a local delivery company but they wouldn't hire me because of my reading and writing skills. I also did not have any type of computer skills. I hate computers. So, they didn't hire me. I'm so fed up with trying to get a decent job. I would like to make good money, but they all tell me that I have to start at the bottom and work my way up to the top. That's baloney! I'm not going to do that. If I can't make at least $10.00 per hour, then I just won't work. I'll just keep living here with my mother.

Constant failure by students with learning disabilities creates barriers for the students that often are too difficult to ever tear down. Moreover, these individuals frequently received little vocational counseling in high school. While there has been suggestions by Halpern (1992) expressing concerns about the narrow manner of community adjustment have been structured in follow-up studies of former special education students, secondary schools still have difficulties giving useful and productive instruction for students to succeed in the world of work. In another report Barton (1990) illuminates the idea that transition for many students to the world of work is often left unaided and "left to chance" (p.6). Barton (1990) focused on five main aspects of the transition of these individuals into the workforce. He highlighted the differences between classroom skills and work-place skills by pointing out that although many students are prepared in terms of the secondary school curriculum, those skills mastered by high school students are not ones deemed desirable by employers. On a similar vein, Rist (1981) suggested that most high school students who want to work immediately upon leaving high school receive little or no guidance. This fact was reinforced by Northruft (1990) who stated, "They are simply released to a labor market that has little to offer them and has little interest in what they learned in school" (p. 10).

Conclusion

Authors of employment/life satisfaction status question the efficacy of whether students with learning disabilities are making a successful integration into adulthood. Some researchers believe the answer is "not as well as they could be", (Sitlington & Frank, 1990; Okolo & Sitlington, 1988; Halpern, 1992; Zigmond & Thorton, 1985; Hasazi, Gordon & Roe 1985). Although the employment rate for graduates with learning disabilities is respectable and almost all individuals who are employed are in competitive employment, still a high percentage of these individuals are in part-time employment with low-status occupations. High percentages are still living at home. In addition, the results for females are much more discouraging. The individuals in the study done by Sitlington & Frank (1990) were high functioning, as evidenced by intelligence scores, math scores, and reading test scores.

As an educator and concerned citizen, I believe that there are no easy answers to the nation's most productive commodity: our children's future. I do not advocate any form of programme where the main component is a "one size fits all" philosophy. As is illustrated in the lives of only three of thousands of students with learning disabilities, each life is different with different variables creating either havoc or contentment. As special educators and general educators, we must bridge the gap between unemployment and unfulfilled lives of youths with learning disabilities and find ways to ensure more viable solutions to the problems they encounter on a daily basis.

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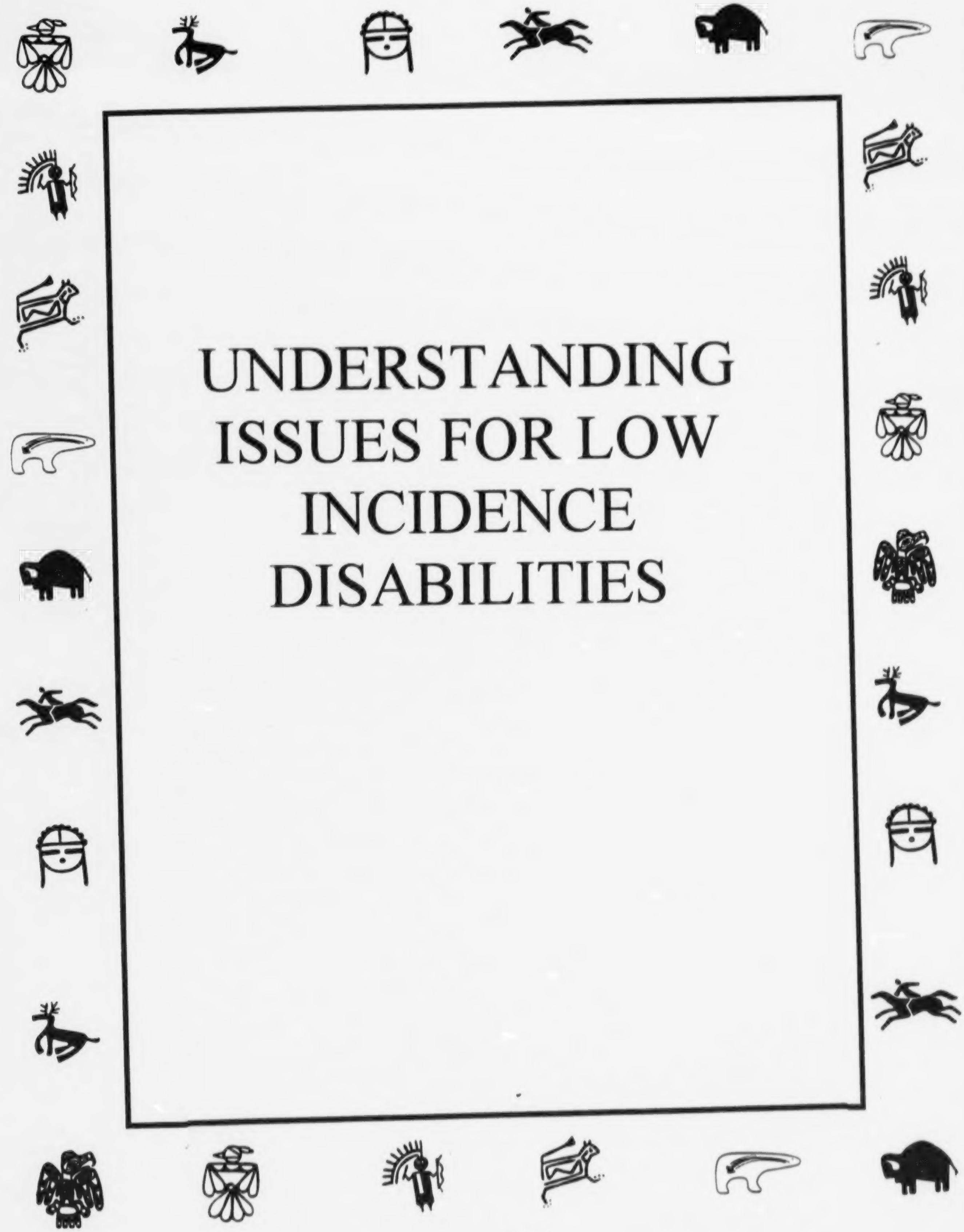

UNDERSTANDING ISSUES FOR LOW INCIDENCE DISABILITIES

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MULTIPLE DISABILITIES: IS RURAL INCLUSION POSSIBLE?

The I.D.E.A. defines multiple disabilities as follows: "concomitant impairments (such as mental retardation-orthopedic impairments, etc.), the combination of which causes such severe educational problems that they cannot be accommodated in special education programs solely for one of the impairments. The term does not include children who are deaf-blind." (34 C.F.R., Part 300, Sec. 300.7). Orelove and Sobsey (1996) suggest that the term applies to children with "1) mental retardation requiring extensive or pervasive supports, and 2) one or more significant motor or sensory impairments and/or special health care needs"(p. 1). Heller and Alberto (1996) state that there is no single definition or common set of characteristics of persons in this category (p. 351). They further suggest that this disability does not include the combination of a major disability with a minor impairment or major disability with secondary conditions (p. 351).

Orelove and Sobsey (1996) categorize the needs of children with multiple disabilities as follows: Physical and Medical (restriction of movement, skeletal deformities, sensory disorders, seizure disorders, lung and breathing control, and other medical problems) Educational (appropriate positioning and handling, appropriate methods of communication, means to choose, and other educational needs such as restrictions placed upon physical activities by the presence of seizures) and Social/Emotional (p. 2-4). Heller and Alberto (1996) suggest that combinations of disabilities from six categories of childhood conditions (physical impairments, health impairments, sensory impairments, communication disorders, cognitive impairments, and psychosocial disorders) may result in a child being labeled multiply disabled (p. 352-353).

Downing and Eichinger (1996) provide the following description of students with severe sensory and multiple impairments: auditory and visual learning difficulties, difficulty understanding spoken and written language, difficulty remaining seated at a desk during seatwork, greater success when actively involved in a learning activity and "provided with tactual cues, pictures, objects, parts of objects and clear models of behavior", and a need for time to examine stimuli and be provided with several repetitions of the learning activity. The ability to ensure the participation of students with multiple disabilities in inclusive settings will certainly be impacted by their unique sets of instructional needs.

In an article describing strategies for the inclusion of students with multiple disabilities, Jones and Carlier (1995) point out the tremendous concern general educators have about the inclusion of students with multiple disabilities. In particular, they focus on the amount of time required to ensure appropriate inclusion of these students. Eichinger and Woltman (1993) offer three suggestions which address the use of student-centered learning approaches: cooperative learning, holistic approaches to reading and language arts instruction, and curricular modification. These suggestions serve as a basis for development of a full inclusion program. Giangreco, Edelman, MacFarland, and Luiselli (1997) imply that the concurrent occurrence of sensory impairments with "challenging cognitive, physical, health, and behavioral characteristics" impact attitudes of educators involved in the delivery of services. Hamre-Nietupski, McDonald, and Nietupski (1992) indicate that teachers are concerned about the manner in which both skill gains and social acceptance can be promoted within the framework of the regular classroom. Concerns centered on four challenges: provision of functional curricula in regular classrooms, provision of community-based instruction, scheduling of staff coverage, and promotion of social integration.

Students with multiple disabilities face a variety of personal challenges in their attempt to benefit from their environment. Complicating this effort are the many barriers (planned and accidental) which force educators to seek extraordinary solutions to essentially simple problems. This paper will focus on the educational needs of students with multiple disabilities in inclusive environments within the context of rural America. An effort will be made to examine the foundations of best practices within the inclusion movement, and to address the issues facing rural communities as they struggle to empower students with multiple disabilities while enabling their families to continue to educate their children at home. Facing the challenges of including students with severe multiple disabilities in rural settings is daunting to say the least. A review of the literature along with practical solutions from the field will be provided.

Least Restrictive Environment — Variations on a Theme

Both Improving America's School Act of 1993 and Goals 2000 mandates mention various possibilities for improving the education of U.S. public school students--regular and special needs. Both reports allude to inclusive measures that could strengthen and amalgamate students towards more productive school and societal careers. Mainstreaming (encouraging placement in general education settings while maintaining the continuum of services) and inclusion (mandating that all special students, including those with severe multiple disabilities, be placed in general education classrooms) have reached an impasse that stems back to P.L. 94-142.

That landmark special education legislation initiated a plethora of current student practices, not the least of which is "least restrictive environment." Mainstreaming and inclusion concepts do not necessarily mean or mandate least restrictive status per se. However, Individual Education Plan (I.E.P.'s) advocates often use classroom adaptations and teacher support to give special education students opportunities to interact with their mainstreamed peers. Such vital and cohesive interactions, in turn, lead to all students becoming more aware, receptive, and knowledgeable of their respective gifts, skills, and potentials. If, with P.L. 94-142, least restrictive environment became the primary focus for the mainstreaming platform, especially for students with mild disabilities, then inclusion has become an emotional forum regarding public school placement of students with more severe disabilities. Active debate regarding what least restrictive status is or could be rages between two equally divided philosophical camps.

Stainback and Stainback (1992) represent full inclusionists. They suggest and urge that inclusion be the special education norm, and in their recommendations they do not allow for part-time or pull-out status. Where mainstreaming connotes and denotes opportunities for special needs students to experience regular education classrooms, Stainback and Stainback suggest that offering a dual curriculum for special students eventually leads to the temptation of restricting their assimilation into schools--and thus into society. By whatever means and adaptations possible, maintain full inclusionists, several non-negotiable postulates are evident. First, all students deserve the best possible education, and regular classrooms can be that location--with selected and perhaps profound adaptations (Baker, Wang, and Walberg, 1995). Studies have not been provided that demonstrate that pull-out and part-time programs work better than inclusion, suggest advocates. Last, inclusionists urge more thorough and comprehensive training and education be provided for all public school teachers if they are to serve their special education students consistently and professionally. Pre-IDEA classrooms have been found to be inadequate for special people, conclude inclusionists, and there is concern that without lobbying for complete integration, a return to more "separate but equal" classrooms might be reinvented (Stainback and Stainback 1992).

Mainstream advocates build their platform on educating special needs students to the best of their capabilities. They suggest inclusion is a philosophical dais, one that has not been adequately thought out, tested, and/or effected. Mainstream people maintain current special education teachers require in-depth training; changes that would bring students with mental retardation and multiple disabilities into all public school classes would mean teachers would need consummately extensive support (Vaughn & Schumm 1995). The remainder of their case argues that forcing students into mainstreamed classes pro forma does not necessarily guarantee least restrictive environment. Some students need much more individualized and specialized attention in one-on-one or small group stations--curricular potpourri can and does work for students needing instructional varieties. Last, testing and validity has not been established to prove superiority of inclusionism vs. mainstreaming (Bos & Vaughn, 1998).

Placement Needs and Rural Concerns

That the above debate has not reached any stasis or final solutions is an important consideration for the next portion of this paper. However, the location of any particular school is an important construct in the argument of where and how to place students (Davis, Kilgo,& Gamel-McCormick, 1998). That more affluent and bigger school districts often have more choices both philosophically and physically is often true. Small, rural schools have many challenges to the least restrictive placements of students with mental retardation and multiple disabilities (Turnbull, Turnbull, Shank,& Leal, 1995).

Discussions with several special education directors in southwestern Oklahoma have resulted in the identification of some specific problems. To begin, rural schools often have small classes where elementary school teachers know their young people well and make allowances for mild and moderate placements. When there is an occasional need for placement of a student with severe disabilities, the teachers, administrators, and students have made in-class modifications for that person. Those same teachers, especially the elementary people, but also including the secondary staffs as well, have to teach a much broader range of classes, and utilize team teaching and team-oriented methodologies (G. Jarvis, personal communication, October 26, 1998).

In locations contacted in southwestern Oklahoma, the prevailing academic notion was one of school self-sufficiency. More than one administrator said: "We take care of our own." Last, it was indicated that several schools are now planning to use electronic media to assist their curriculum development. Computers, per se, are not the only or total answer to school placements for students with mental retardation and multiple disabilities. However, many teachers in southwest Oklahoma who have not had benefit of collaborative measures before Internet, e-mail, and other distance learning opportunities, can now use those technologies to benefit their students. Though rural schools might be limited to faculty that they might employ, they are not limited to the intellectual capital that they can reap with computer-aided instruction.

Community and Meeting Needs

The people, curricula, and program challenges that face 21st century special educators are legion and the complexities extreme. The debate relative to the implementation of the concept of least restrictive environment continues. Rural special education programs, based on our research in southwestern Oklahoma, offer a variety of opportunities for the delivery of appropriate educational services for students with severe to profound mental retardation and multiple disabilities. We postulate our research will confirm there are unifying pedagogical principles that apply to the rural school personnel we have contacted. Those principles include the following suggestions, ones that other rural school districts might use to efficiently aid their own special education programs:

1) Computer applications utilizing Internet, e-mail, and distance learning;
2) Team teaching interactions at both the elementary and secondary levels;
3) Peer tutoring and service education (experiences in volunteerism) of mainstreamed public schools students who have and can assist their special education counterparts;
4) Collaboration on the part of nondisabled students with students with disabilities in after-school classes and activities;
5) Involvement of faculty in nonschool activities with students with disabilities;
6) Close contact and working relationship with community medical and health care professionals; and
7) Professional educators serving as integral parts of a family's support system.

Conclusion

Throughout this paper the terms "mainstreaming" and "inclusion" have been used to describe views, both historic and contemporary, which attempt to put a human face on the legal concept of least restrictive environment. Discussion has also focused on the difficulty faced by rural school districts in their efforts to serve children in their communities who have severe multiple disabilities. Despite the tremendous challenges facing these rural communities, there exists a pervasive sense of shared responsibility by many of their educators.

We live in an age in which the boundaries that confine us are being crossed with electronic fiber-optic highways. We also live in an age in which people are searching for a sense of community perceived by many to have disappeared long ago. The sense one has, after discussing the needs of children and youth with multiple disabilities in rural communities, is that "we know each other here, and we want to take care of each other, and given the right tools, we can accomplish that." By no means is that feeling universal in rural schools. But for those districts where it exists, students with severe multiple disabilities have an opportunity to experience learning in an inclusive setting, which some use as a synonym for "community."

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EDUCATIONAL SERVICES FOR STUDENTS WITH VISUAL IMPAIMRENT IN RURAL COMMUNITIES: MYTHS AND REALITIES.

Students with visual impairment often live in rural communities and they receive their education in these communities. In order to respond to needs of rural students with visual impairment, assumptions regarding services in rural communities need examination in light of available research. References to the challenges of educating students with visual impairment who attend school in their nonmetropolitan place of residence are common. The factors most commonly mentioned include (1) recruitment and retention of teachers, (2) isolation of teachers, (3)) availability of environments appropriate to teaching of concepts (Helge, 1986), (4) problems providing adequate time to meet needs of students (Huebner, 1985) and (5) isolation of students with visual impairment from contact with other individuals with visual impairment is an issue mentioned by teachers of students with visual impairment (Jager, 1997) but not often discussed in the literature.

First, background information regarding some myths and realities of rural areas and students with visual impairment are presented. One of the first myths concerns the nature of rural communities. In a section on rural travel in Jacobson's (1993) Orientation &Mobility (O&M) textbook, the need to teach the use of unusual clues such the tinkling of cowbells is mentioned. Agricultural and rural are sometimes used as synonymous.

Definitions of rural in the literature and in individual minds are not consistent. In a survey completed by this author (Jager, 1997), working definitions for rural and nonmetropolitan were elicited from vision service providers. Two listservs related to the field of blindness and visual impairment (OANDM@MSU.EDU, DVH-S@LISTSERV.ARIZONA.EDU) were surveyed. Seven teachers of students with visual impairment, O&M specialists, or dual certified teachers responded with seven different definitions of "rural". Definitions given by respondents included some of these variables: availability of public transportation, distance from a metropolitan area, size of nearest city in the region, density of population, and environmental features, such as, lack of sidewalks. Definitions given by professionals in response to the survey reflects the diversity of implied definitions found in the educational literature.

Rural or nonmetropolitan communities where students with visual impairment reside have heterogeneous characteristics. A frequent connotation of the term rural, is farming communities, yet less than 4% of rural lifestyles found in the United States consists of family farming (Helge, 1991). A diversity of economic bases in rural areas include tourism-resorts, small businesses, manufacturing, agricultural-related industries, timber, petroleum, fishing, military service, and subsistence economies (Stern, 1994). Economic success and demographics of rural communities change over time, for example, a revitalization occurred in some rural communities during the 1970's and economic stress increased in some communities in the 1980's (Brown, 1989). A lack of similarity among rural communities extends to topography and population density. Small communities range from isolated Alaskan bush villages, hundreds of miles apart, to the clustering of small towns in New England.

Factors Influencing Educational Service

Recruitment and retention. Loss of trained specialists is reported to be severe with personnel turnover at 30%-50% (Helge 1981). Factors influencing turnover of staff are low salaries, geographic and climatic conditions, certification requirements, and availability of training programs. Lack of preparation for living and working in a rural area is thought to contribute to turnover of staff. A survey of administrators and special education directors in the Appalachian mountains, reveal a consensus that special education personnel recruited were not sufficiently prepared for work in rural environments. They said that if local staff could be given necessary personnel preparation, they would no longer have a retention problem. The idea being, local people are already prepared to live in rural settings. In addition to the shortage of trained staff, rural school districts struggle to retain trained staff or to hire staff for less then full-time.

Teachers who chose to work in rural areas face a number of potential issues which are raised in the practical literature available to these individuals as resources but which are frequently inaccurate, misleading, and not supported in the common literature. The individual nature of reality for rural school districts, the authentic challenges of providing adequate services can be obscured by the myths that are repeated as common knowledge.

Bina (1987) found that a major characteristic affecting job satisfaction was salary level. In 1988, rural teachers base salary averaged $4,800 less than of the average nonrural teachers (Stem, 1994). Research shows that teachers frequently leave to obtain better salaries. Salaries appear not only to affect retention but also impact recruitment.

Helge (1986) found rural areas lack preservice and inservice opportunities. Personnel preparation programs are listening to expressed needs of rural school districts and are beginning to provide support for needs of remote, nonmetropolitan areas by adding outreach personnel preparation components to their programs (Parsons, 1985, Sowell, Correa & Wardell, 1987).

Isolation and stress of teacher. Spungin and Taylor (1985) state that working as the only teacher of students with visual impairment in an area can cause one to feel isolated, unable to share problems and stressed. They suggest encouraging participation in conferences and workshops to reduce isolation. Technological advances such as use of e-mail and cellular telephone service may aid in reducing isolation. Effects of isolation on stress levels of teachers are questionable. Bina (1982) surveyed 238 teachers and did not find a significant morale difference between residential teachers and itinerant teachers. This study also found teachers in rural areas were more satisfied with their position than urban teachers.

Frequent reference is made to the distance professionals must travel between students (Bryan, 1989, Huebner, 1985). Distance to service is thought to influence frequency of direct contact with students (Bina, 1987, Brodie, 1985) and the stress level of service providers (Spungin & Taylor, 1985). In a survey of itinerant Texas teachers, Bina (1987) found driving long distances and dealing with mechanical car problems frustrated teachers. Teachers stressed the importance of being organized and prepared with alternative activities because the office was too far away to return to when schedules or lesson plans needed to be changed without warning.

Environment. References to lack of teaching environments are found in orientation and mobility literature. LaGrow and Weessies (1994) state that rural areas are characterized as having no sidewalks, poorly defined shoulders (of roads) and an increased distance between streets, "... truly rural environments have neither (curbs or sidewalks)"(p. 174). Teaching of concepts such as residential blocks or traffic patterns and teaching of skills such as bus travel or outdoor travel with a cane is more difficult in environments referred to as "rural" in typical O&M literature.

Ability to meet student needs. The ability of rural school districts to meet the needs of students with visual impairment is questioned, based on their ability to recruit staff with appropriate skills and to provide an adequate amount of staff time to meet student needs. Historically the lack of appropriately trained staff to meet the needs of students with visual impairment has been noted (Klein, 198). Anyone reviewing job postings for teachers of students with visual impairment or O&M specialist will agree this is a difficulty not limited to rural areas.

School districts, trying to meet the needs of their few students with visual impairment may organize those services in a variety of ways. A district may hire a single qualified teacher, may join with other neighboring districts to form a cooperative, or may be divided at the state level into service regions for purposes of service delivery. The diversity found in rural communities reflects variations in methods used to provide special education services. American Council on Rural Special Education (ACRES) found over 300 variations of special education delivery systems (Helge, 1991). The organizational structure influences support, resources, and frequency of service options available to teachers of students with visual impairment. For example, Alaska uses a variety of models to serve students with visual impairment in communities within the state's border. To serve students isolated in remote communities, Brodie (198 5) describes a teacher-consultant model. Professional staff make extended visits (1-5 days) every few months. Although Brodies's article was published in 1985, this author's teaching experience in Alaska (1989-1993) found the same model continues with relatively few changes. The educational agency providing this form of service delivery is a state organized outreach program that serves students with disabilities including students with visual impairment throughout a large number of rural and remote school districts. In more populated communities, individual Alaskan school districts hire qualified teachers to serve in the more traditional itinerant model with visits of shorter duration and greater frequency.

Caseloads of rural teachers average higher than teachers serving in suburban and urban areas (Olmstead, 1995). When extensive driving time is added, severe time shortages result. A resource allocation committee of the state of Colorado is establishing guidelines to ascertain caseloads for itinerant personnel (Toelle, 1997). Teachers total hours of service (direct and indirect) required by students, travel time between destinations, and percentage of workweek needed to meet other duties involved in the position. Other duties including parent contact, supervision of support staff, inservice, report writing, evaluations, and other assigned duties, may average 25%-40% of the week. Colorado includes space on the IEP for both direct and indirect service needs. IEP documented needs are a powerful justification for increased support. In California, Olmstead (1995) found that only 16 of 56 surveyed teachers included indirect service time on the IEP and only thirteen teachers said the document reflected service needs. A majority of IEPs reflect a combination of student need and teacher availability. MacCuspie (1998) suggests that when only one teacher is available in an area assignment of specific tasks to other trained personnel under the direction of an itinerant teacher may be necessary. Some of the programs in California and Oregon hire itinerant aides to support teachers of students with visual impairment.

Bull and Ruperd (1997) advocate for increased use of community-based resources to serve students with visual impairment in rural areas. Rural communities have a variety of educational resources including regular education teachers, shared cooperative services, and volunteers from the community. Churches and social organizations are commonly available resources along with lodges, societies, parent networks, and community businesses. Olmstead (1995) surveyed itinerant teachers of students with visual impairment in California and found that teachers frequently used other resources such as grants, personal funds, and fund-raising projects to supplement official support.

Isolation of student. Several teachers serving rural students mentioned their concern regarding isolation of their students from role models (Jager, 1997). Many programs are actively arranging opportunities for their students through summer camps, summer programs at schools for blind, and field trips for students with visual impairment. Connections are sometimes made to adults with visual impairment in the community or through Internet.

Summary

As school districts accept accountability for appropriate placement, students with visual impairment are being educated in settings that span a continuum. Historically, a student needed to attend a school for the blind to receive specialized services (Roberts, 1986). In Olin Burritt's 1916 president's address to the American Association of Instructors of Blind, he said "children who live in rural school districts should be educated in residential schools" (Goodrich & Sowell, 1996, p. 405). However, currently increased numbers of students with visual impairment are now educated outside of residential schools (Poppe, 1991) and many of these school districts are located in rural communities. Students with visual impairment are now, more commonly being educated in their local schools while living at home. The greatest challenge facing urban, suburban and rural schools is still the lack of trained staff. A few personnel preparation programs are trying to creatively change by offering distance delivery training programs, by making use of specially trained assistants, and by developing intensive, specialized, short-term training at schools for the blind.

Rural districts are addressing needs of students with visual impairment in a number of ways, many of which are similar to schools found in large urban areas (Olmstead, 1991). They may be served in regular classroom, resources rooms, and special schools. They may receive support in their classroom, pull out services, or tutoring. Services may be provided through the hiring of a single teacher, cooperative sharing of a teacher/teachers (sometimes called a regional program), placement in a residential school or through outreach programs (Spungin & Taylor,1995). Although there are many similarities with urban districts, differences need to be considered in order to ensure effective services. As professionals we need to focus on adapting our service delivery to meet the needs of rural schools, families and students.

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MULTIDISCIPLINARY TRAINING FOR RURAL OUTREACH TO CHILDREN WITH COCHLEAR IMPLANTS

The National Institute on Deafness and Other Communication Disorders estimates that 1.6% of children under the age of 18 in the United States has an educationally significant hearing loss (NIDCD, 1996). During the 1995-96 school year, 68,070 children between the ages of 6 and 21, many of them residing in rural areas, received educational services for hearing impairment (Niskar et al., 1998). Since the initial FDA approval of a surgically implanted cochlear device for children with profound sensori-neural deafness in 1989, there have been increasing numbers of children who receive cochlear implants. Cochlear Corporation, manufacturer of the common Nucleus Series devices, documented an average annual increase in pediatric implantation of 23% over the period of 1992-1997, and currently it is estimated that approximately 10,000 children worldwide have cochlear implants (Cochlear Corporation, personal communication). As the number of children with cochlear implants increases, the demand for audiologists, speech-language pathologists, and educators of oral deaf children to work on multidisciplinary teams and in educational settings with these children increases. Severe personnel shortages exist for all of these specialty areas in rural locations throughout the United States (1995-1996 Teacher Shortage Areas, Nationwide List, U. S. Department of Education).

Cochlear implant centers are located primarily at major urban area tertiary hospitals. Children from surrounding regions are brought to these centers for surgery and then returned to their local school districts, pre-schools and daycare centers for intervention. It is likely that there may be no one in their home communities who is knowledgeable about the care of cochlear implants, what to expect of the child's communication abilities, and how to provide the most appropriate program for maximizing progress. Outreach to rural areas is one of the most difficult problems cochlear implant teams currently face (Nevins & Chute, 1995) and, indeed, provision of any type of specialized communication services for rural populations is an ongoing area of need (American Speech-Language-Hearing Association, 1991). For example, the Nashville Cochlear Implant Team, based at Vanderbilt University Medical Center, is the nearest implant center for children living throughout predominantly rural middle Tennessee and southern Kentucky. During the period of 1995-1998, approximately 80% of children implanted at Vanderbilt came from rural areas more than an hour's drive from Nashville. It is impractical to expect community and general education personnel to travel considerable distances to learn about cochlear implants and how best to support the young individual who is now in their jurisdiction. This presentation/ paper describes a United States Department of Education funded training grant designed simultaneously (1) to increase the number of trained professionals in three communication-related disciplines who are prepared to serve on cochlear implant teams and are knowledgeable about the "best practices" in educational management of deaf children with cochlear implants and (2) to provide requested inservice training on educational support for deaf children with cochlear implants to daycare, preschool and school district personnel in rural areas throughout middle Tennessee and southern Kentucky.

Program Components and Model

Design of Program

The program is a three-semester sequence that begins during spring semester with a multidisciplinary seminar including selected students from audiology, speech-language pathology, and deaf education. Curriculum content units include the following: History and Overview of Cochlear Implants (including perspectives from the Deaf community), Auditory Development in Children with Hearing Impairment, Language and Speech Development of Deaf Children, Candidacy Considerations for a Cochlear Implant, Surgical Considerations and Post-Operative Follow-up, Functioning as a Member of a Multidisciplinary Team, Mapping of the Cochlear Implant, Device Trouble Shooting, Auditory Skills Training, Speech and Language Intervention, and Research on Performance of Children with Cochlear Implants. During the semester one or more guest speakers of national stature are brought in to address the seminar and these lectures are opened to area professionals involved in education and intervention of deaf and hard of hearing children. Vanderbilt students participating in the seminar are assigned to multidisciplinary teams for exercises and simulations throughout the semester. Assignments are designed for specific student needs. For example, when assessing children with cochlear implants, the audiology students focus on auditory skills, while the speech-language pathology students concentrate on speech and language evaluations and the deaf education students consider pre-academic skills as well as audition and speech. Role play and simulations are an important part of the seminar: in simulated cochlear implant team meetings, assessment information is shared across disciplines to make the best decision about candidacy and intervention needs for specific children (selected from actual though anonymous-- case histories of children referred to the Nashville Cochlear Implant Team). The practice portion of students' final seminar examination involves simulated presentations of inservice programs targeted toward pre-defined audiences (e.g. daycare workers, teachers of the deaf, administrative and general education staff etc.). In addition, students are asked to reflect on the team process that they experienced throughout the semester (Briggs, M., 1997).

During the second (summer) semester, students are placed in various settings with deaf children who have cochlear implants. These placements are arranged to match individual student's interests and needs. For example, two students in deaf education were able to work in their hometowns of Birmingham, Alabama, and Rochester, New York. A series of assignments targeted toward helping assure that the student will obtain a range of experiences with implanted children is provided as a guide for site supervisors, and videotaping of sample lessons with student self-evaluation is encouraged. These videotapes serve as the basis for discussion with the university supervisor and among the various members of the student multidisciplinary teams. Students who remain in Nashville must attend a weekly seminar to share experiences and continue to discuss issues related to rehabilitation of children with cochlear implants. One of the primary issues is how to transition from a child using total communication prior to implant to increasing reliance on auditory verbal communication once the child has received the implant (ref). Those students who have practicum/clinical experiences in other communities mail weekly lesson plans to the university supervisor, who contacts the site supervisor every two weeks by telephone. In addition, they are required to submit two self-evaluated videotapes - one at the beginning of the practicum experience and one toward the end.

During the final (Fall) semester, students work in multidisciplinary teams to respond to requests for educational support and general information on cochlear implants. During the first year, most of these requests came from school districts or preschools where children recently implanted by the Nashville Cochlear Implant Team had returned for educational and rehabilitative programming; some were in rural settings. Requests also came from the Tennessee State Coordinator for Early Intervention and from the Consortium of Deaf Educators. The Vanderbilt students worked in fluid teams (whoever's schedule best matched the timeslot) to design, present, and evaluate the inservice program. Prior to the actual presentations, students spent time learning how to design a workshop for "adult learners" (Eyler, 1998). They then practiced applying this knowledge by planning and giving a presentation to a class of undergraduates in special education and one for audiologists/speech language pathologists serving on an aural rehabilitation team for adults. Each student was expected to serve on at least two teams that provided actual outreach inservice.

Conceptual Framework

Problem based learning: In recognizing the limitations of conventional teaching methods and practice, many educators have begun to experiment with an educational approach first used in medicine and called problem based learning (PBL) (Barrows & Tamblyn, 1980). PBL is the learning that results from the process of working toward the understanding or resolution of a problem. In other words, students are given the problem or issue *first* as a means of stimulating further learning, as opposed to first being provided with the facts independent of a problem-solving environment. This allows students to individualize their learning by pursuing only what they do not know. PBL assumes that when we encounter complex "real world" problems that require us to research the literature and consult with experts for advice, we are more likely to retain the information that we learn. In contrast, research suggests that much of the information provided in a strict lecture format is never absorbed or remembered (Miller, 1978; Norman, 1973). A PBL curriculum typically de-emphasizes the lecture format and emphasizes hands-on problem-solving skills, self-directed learning, and independent critical thinking. Traditionally a faculty tutor facilitates the learning process with small groups of students by guiding them through the resolution of a problem, developing self-directed learning skills in the process. As a group, the students discuss the various aspects of the problem that they have researched and attempt to integrate their findings into an educational or management plan. It is important to emphasize at this point that PBL instruction is not being advocated in isolation. Not all knowledge for a complete educational background can be gained through PBL. The use of classroom lectures, laboratory experiences and traditional practicum continue to be essential components of audiology, speech-language pathology and teacher education. PBL, however, can provide the contextual environment that appears to be critical for integrating factual knowledge and independent problem-solving skills. By having students from traditionally separate disciplines together in the seminar with the focus on a common "complex problem" (the educational management of young children with cochlear implants), we hope that they will share what they have learned as a class, thus appreciating the strengths that each group contributes.

Competency Strands: Four major competency strands are reflected in the program curriculum. These strands, indicated in Figure 1 across the top of the matrix, include the following : Multidisciplinary Team Functioning, Knowledge of Cochlear Implant Technology, Knowledge and Skills for Effective Communication (Re)habilitation, and Knowledge and Skills of Adult Learning Methods. These general competencies reflect the program's overall emphases. Not only should students learn the technical information to make them knowledgeable about cochlear implant technology and implantation issues, but they need to become familiar with approaches to intervention and learn specific techniques to maximize the communication and educational progress of children with cochlear implants. In order to function effectively within the multidisciplinary context that is essential in managing these children, students must learn to work cooperatively in teams and to appreciate the contributions of team members from other professional disciplines. In addition, to function effectively in a training/support role for adults who are learning about children with cochlear implants, students should be able to assess what their audience needs and wants to know (audience analysis) and how to present that information in a collaborative and not condescending manner.

Compentency Strands

Levels of Independence	***Multidisciplinary Team Functioning***	***Knowledge of Cochlear Implant Technology***	***Knowledge & Skills of Communication (Re)habilitation***	***Knowledge & Skills of Adult Learning Methods***
Didactic Learning	Seminar Module • team building	Seminar Modules Guest Lectures Lab Experiences Observations • mapping • troubleshooting • hardware • surgery	Seminar Modules Guest Lectures Lab Experiences Assessments • audition • speech • language Observations in clinic	Seminar Module Guest Lecture Interactive Learning Activities
Simulations	Simulation of participation in C.I. Team Meeting • Effective Communication • Problem Solving	Simulation of Inservice Program – Content Information	Simulation of a Re(hab) Team meeting using case histories of C.I. candidates • interpreting assessment data • setting (re)habilitation goals • treatment out-com evaluation	Role Play Practice Inservice Presentations to local groups
Independent Application	Practicum Experience (function as part of intervention team) Inservice Presentations to school personnel	Practicum Experience (demonstrate knowledge of concepts/technology) Inservice Presentations to school personnel	Practicum Experience (provide competent clinical/educational (re)habilitation Inservice Presentations to school personnel	Inservice Presentations to school personnel

Figure 1 presents the matrix on which this model training program is based. The four competency strands discussed previously are listed across the top, and three "levels of independence" are listed on the vertical axis. These three levels represent increasingly independent functioning where students are moving from more didactic, traditional methods of learning toward supported, yet fully independent, application of the concepts (structured when possible as problem-based learning). The intermediary level of independence consists of simulations and role plays, where students have the opportunity to practice some of the skills that they will need at the level of independent application. Various activities that illustrate the curricular information at each of the three levels are included in the matrix. These are meant to be illustrative and not exclusive.

Benefits of the Program

The benefits of this training program can be seen at several different levels, including the following:

For Children

Having well-informed, knowledgeable teachers , audiologists, and speech-language pathologists ultimately benefits the children with cochlear implants who are in schools and clinics under their care. The students involved in this training program are learning in depth about cochlear implants and the educational methods that will best support children who use them. When these students begin their professional careers, they should be a resource about cochlear implants to other personnel, as well as taking leadership in providing the service that meets these children's needs. In addition, via the inservice outreach provided by the students in training to other professionals serving children with cochlear implants, a wider range of personnel is being given pertinent information, including personnel in rural settings where information and support is not readily available. That can only help implanted children function more effectively in their care and educational settings. School and daycare personnel who are knowledgeable about cochlear implant equipment are more likely to troubleshoot the device and take appropriate action, if indicated. They are more likely to include the kinds of auditory skill training that are necessary for the most effective use of a cochlear implant (Tye-Murray, 1992.).

For University Students

The participating Vanderbilt University students have the benefit of a unique opportunity to study, learn, and work with students from other disciplines. This should help them function more effectively on multidisciplinary teams, whether in hospitals, clinics, or schools.

Students gain:

- hands-on experience with children who have cochlear implants
- practice in presentation of workshops for professionals and parents
- opportunity to observe candidacy evaluation, surgery, mapping and rehabilitation sessions
- supervised experience providing rehabilitation and educational training for children with cochlear implants
- awareness of issues of service delivery in rural areas for low incidence disabilities
- opportunity to become involved with families considering the surgery
- opportunity to follow children through the surgery and into a rehabilitation program
- development of a resource library for future students and personnel in (rural) school districts

For Other Professionals

This training model provides a bridge between the university medical center and regional (including rural) school systems. In the past it has been difficult for members of the Nashville Cochlear Implant Team to respond to requests for information and support from the many educational settings where children with implants reside. While it is still necessary for Implant Team professionals to follow-up in person on highly specific information, especially if there are complications involved with a particular child, student teams are well prepared to provide general information. Although it is not a complete solution to the need for the Implant Team to work with school personnel directly, it has helped by providing a more flexible and time-efficient way to get basic information and general programming information on cochlear implants to school professionals . Specific questions about a particular implanted child who may be having problems are referred back to the team members involved in the surgery and programming of the implanted device. After conducting the general training workshops, student teams can then facilitate continuing interprofessional communication. The students are often in the position to guide school personnel to the most appropriate resource if they have issues that require more specialized information.

For the Community

The program-sponsored guest lectures by national experts in the area of cochlear implants in children are open to interested professionals and parents in the community. This serves as a professional development opportunity for teachers of the deaf, speech-language pathologists and audiologists in Davidson County and surrounding areas. Information assembled by program students furnishes a resource for the Tennessee State Department of Education to provide technical assistance to daycare centers and preschools enrolling children with cochlear implants: even small programs in rural areas have access to this technical assistance.

Summary/Application

The educational model of problem-based learning can be adapted to training programs in many areas of special education in order to encourage students to work in interdisciplinary settings and to focus on identification of problem areas and practical ways in which they can independently seek out information and solutions. Such "active, problem-solving" ways of learning serve all students in helping professions well, not just those who may be moving into service delivery in a rural setting.

Special education for populations that are low-incidence (hearing, vision, autism, multiple disabilities, etc.) is traditionally difficult to provide in rural settings. Using graduate students from regional training facilities to bring information and support to teachers who may not have had specific background in this area of exceptionality can provide a resource for rural educators while involving postsecondary students in active learning and problem-solving. This poster session portrays such a "partnership" using multidiciplinary students who serve deaf children with cochlear implants. Other types of low-incidence disability also could be modeled on this approach.

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